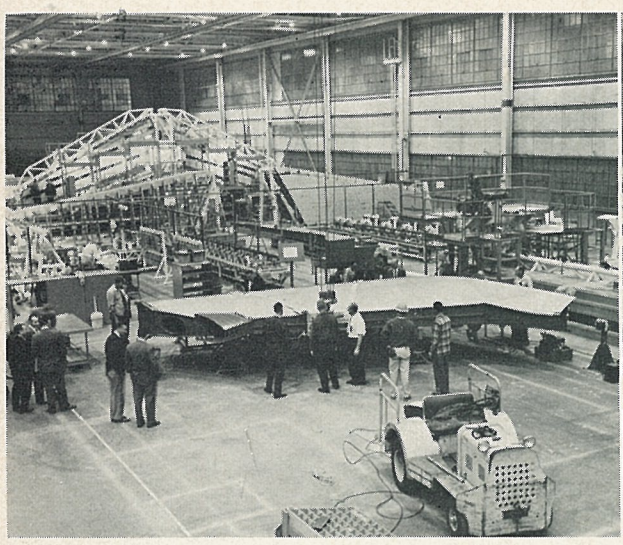
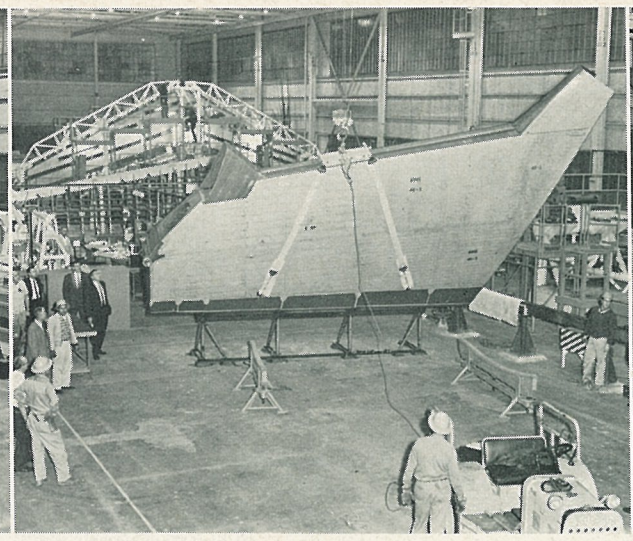
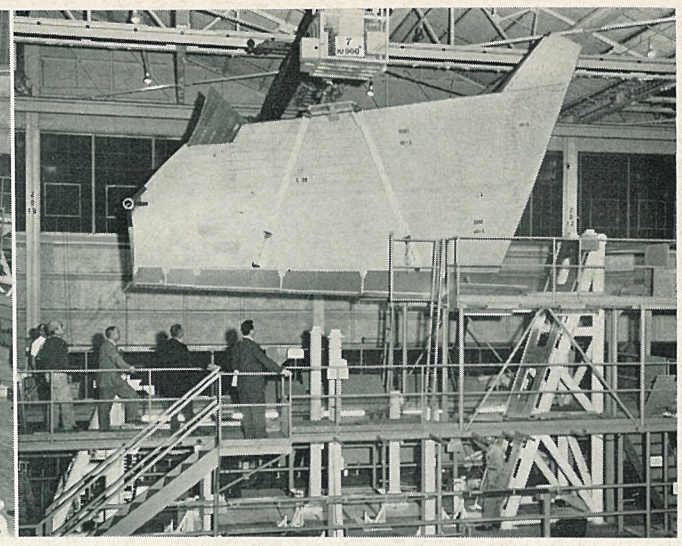






OUT OF BUCKS—First vertical stabilizer for C-141 empennages, being built at GD/Convair for AF jet cargo plane under subcontract from Lockheed-Georgia Co., moved out of huge bucks Dec. 18. First horizontal stabilizer came out of bucks final week in month. Mating of stabilizers for first empennage is due to start in near future. Among those on hand to watch first move-out, pictured in above sequence, were James M. Adamson, C-141 program manager, N. P. Pearson, C-141 production supervisor; E. E. Miller, Dept. 141 assistant foreman; B. R. Hisaw, chief of transportation operations; Mel Thurmon, Lockheed source control inspection representative. Three articles now are in works in Plant 1, Bldg. 2, production area with static test article (No. 2 empennage) due for March delivery.

GD

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 16, No. 1 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, January 9, 1963

Indonesia Buys Three Jet 990As For Garuda

Sale of three Convair 990A jet airliners to the government of the Republic of Indonesia was announced last week by General Dynamics/Convair.

The planes will be operated by Garuda Indonesian Airways, the government-owned airline with headquarters at Djakarta.

Garuda is an old and valued customer for Convair aircraft, having operated them successfully for many years. The line acquired five 240s, eight 340s and three 440s. The only other line to operate all three of these commercial models is Servicos Aereos Cruzeiro Do Sul, S.A. of Brazil.

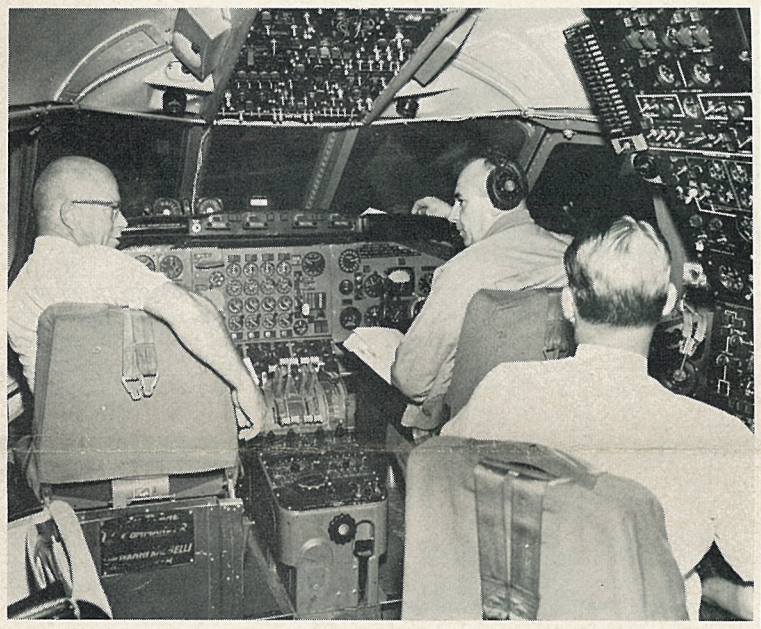
J. H. Famme, president of GD/Convair, said the 990As would be delivered at a one-a-month rate in May, June and July.

GIA will put the planes in service on its route network connecting Djakarta, Singapore, Bangkok, Hong Kong, Manila and Tokyo. The Convair 990A will accommodate 103 passengers in the 42-seat, first-class cabin (which includes a four-place lounge) and the 57-seat cabin.

Last week's sale brings to seven the number of Convair jetliners sold in the last 30 days.

The planes delivered to GIA will be the long-range version of the Convair 990A, which is the new designation for the faster Convair 990 jet airliner.

The long-range 990A is a swept-wing jet transport powered by four General Electric CJ 805-23B engines that produce 64,200 lbs. of thrust.



COCKPIT CREW — Shown in 990A are Pilot W. D. Carrier, Co-pilot John Knebel, with R. M. Bloom, flight engineer. Masterful piloting performances marked 990A's triumphant tour of South American routes.

Peerless

South American Visit A Triumph For 990A

A Convair 990A jetliner's 13,375-mile round trip from San Diego to Sao Paulo and Rio de Janeiro last month was a complete triumph of dependability and performance, crew members and South American airline personnel both agreed.

The airplane, incorporating the new speed improvement kit, performed flawlessly from high altitude airports (including Bogota, Colombia's field at 8,355 feet.) and made spectacularly short landings at Sao Paulo's (6,190 ft.) Congonhas airfield. Despite the limited runway there was room to spare.

(It was the first time a four-engine jet had landed at Congonhas and many thought it couldn't be done. After the landing a spectator, still skeptical, said: "They landed all right but they'll never get her off!")

However, any doubts as to the airplane's ability to land safely and take off from such fields were erased completely when Pilots W. D. Carrier and John Knebel brought the ship down on the table-top field (there are 150 ft. drops at either end!) with consummate ease. The aircraft stopped on that first letdown within 4,000 ft. and pulled off at the first intersection.

"We couldn't have had 'better' weather for a short field demonstration," Jack Donaldson, aerodynamics design specialist, recalled this week. "We were in a thunderstorm and the runway was sopping. But even under these conditions the landing was strictly no strain."

Brazilian Government and airline personnel witnessed the performance and were understandably impressed.

The airplane operated out of Sao Paulo for several days. On one landing the ceiling was 450 ft., visibility ¾ mile, and even though the plane came in downwind and "down hill" (for there is a slant to the runway) only three-quarters of the strip was needed.

While at Sao Paulo the airplane was on public display and 2,500 came aboard. Passengers on demonstration flights included the Director General of Brazilian Aviation.

Altitudes flown during the trip ranged up to 35,000 ft. and most

(Continued on Page 2)

W-2 Form Mailings Start in Mid-Month

Mailing of W-2 forms to General Dynamics people whose accounts are handled by GD/Convair will begin by the middle of this month, said J. L. Terrien, GD/Convair accounting payroll supervisor.

Forms should be in the hands of hourly and flat-salaried personnel of GD/Convair, GD/Electronics, Advanced Products, and hourly General Office by Jan. 20.

W-2 forms must be attached to all federal income tax returns.





FIRST—Swissair's first up-dated Convair 990A on Zurich airport runway after 181 flight hours proving out speed-improvement modification completed in late November. GD/Convair coordination team who worked closely with Swissair crews during mod are (from left) John Williamson, John Crenshaw, Frank Pyatt, Jack Horner, Mel Clause, Bruno Bracka.

621 mph Cruise Set For 990A

An air worthiness certificate has been awarded by Federal Aviation Agency for the world's fastest jet transport, American Airlines' new high-speed Convair 990A Astrojet.

This certificate — or revenue ticket—will permit American to put the 990A into scheduled passenger and cargo-carrying service. The airline will take delivery of the first of five 990As from General Dynamics/Convair late this month and expects to have all by the end of March.

An improved version of the 990 Astrojet now in service with American, the Convair 990A has for several months been undergoing extensive flight and related tests. It has a cruising speed of 621 mph, faster than any other jet transport and about 25 mph faster than the 990. Top speed is 639 mph.

American reported that the 990 Astrojets that entered service on its routes last March met with

(Continued on Page 2)

Swissair Pilots Laud Performance of 990A

Swissair pilots are enthusiastic about the improved performance of the airline's first modified Convair 990A, according to recent reports from Zurich headquarters.

"It handles better . . . it is faster with the same cruise power . . . all pilots prefer flying this airplane," is a sampling of opinions coming from Swissair pilots, including Captains Bruno Schmitt and Karl Scharer.

The first modified long-range 990A had had 181 hours in the air over Swissair's wide-flung routes up to Dec. 22. The new version Convair jetliner went into scheduled service on Dec. 2 after completion of the modification which included changes in engine pod, wing leading edge, and a new fillet joining the wing with the fuselage.

Work on the first Swissair plane had been under way since the latter part of September at Kloten Airport, near Zurich, with a Swissair crew doing actual installation in cooperation with a GD/Convair team.

The six other Swissair 990s will be converted to the 990A version as their flight schedules and overhaul programs permit. The second was cycled into the program the first of this week, reported Mel Clause of GD/Convair transport field service who has been coordinating the Performance Improvement Program at the Swiss base.

Clause and Bruno Bracka, liaison engineer, returned to Switzerland after the holidays to resume their duties in coordinating modification.

The rest of the GD/Convair team, on site during updating of the first plane, now are all back at San Diego with completion of their responsibilities. They are John Crenshaw, field service representative; John Williamson, FAA designee inspector; Jack Horner, tooling engineer; and Frank Pyatt of field operations.

Excellent cooperation and fast

(Continued on Page 2)

Log Book Entries



Harold L. Pope Jr. of GD/Electronics Dept. 25-00 is pinned by General Manager John L. Lombardo following 25 years with company. Congratulating him (at far left) is H. F. Johnson, GD/E controller.



L. A. Brugger (Dept. 48-95) received 25-yr. service pin recently from W. J. Martin, GD/Convair director of reliability.

Service Emblems

CONVAIR

Service emblems due during the period Jan. 1 through Jan. 15.

Thirty-year: Dept. 140, W. M. Schlagenhauf.

Twenty-five-year: Dept. 23-2, J. A. Stevens; Dept. 48-56, G. M. Graham; Dept. 101, H. F. Bauman; Dept. 140, D. R. Winkler; Dept. 400-1, J. H. Villain.

Twenty-year: Dept. 44-3, W. D. Bertsch; Dept. 101, C. F. Dupree; Dept. 137, J. R. Grimm; Dept. 192-1, E. J. Kline; Dept. 401-4, W. W. Peterson.

Fifteen-year: Dept. 6, A. E. Hunt, F. H. Skilton; Dept. 22-0, J. P. Corrao; Dept. 48-11, L. F. Stone; Dept. 102, Margaret M. Parker; Dept. 141, A. R. Barron Jr.; Dept. 171, W. F. Connolly, John Korchick; Dept. 216, Elma S. Mendenhall.

Ten-year: Dept. 3-8, Adalean L. Rodgers, J. E. Royle; Dept. 16-4, Herbert Mattes; Dept. 23-4, F. R. Luedtke; Dept. 34-5, K. J. Scharfenberger; Dept. 44-4, Mary M. Tyler; Dept. 101, B. N. Gowing; Dept. 401-4, J. W. McMahon, Frank Wislofsky.

GD/ELECTRONICS

Fifteen-year: Dept. 72-00, F. H. Harwood.

Ten-year: Dept. 54-07, H. A. Stutzman; Dept. 71-00, Roland Hogue.

Retirements

CONVAIR

ADDLESON—Harry A., Dept. 146. Seniority date May 5, 1953, retirement effective Oct. 5, 1962.

BLUM—Daniel F., Dept. 3-5. Seniority date Aug. 22, 1950, retirement effective Nov. 30, 1962.

GIBSON—Verne A., Dept. 401-3. Seniority date Feb. 16, 1942, retirement effective Dec. 14, 1962.

JOHNSTON—Verna M., Dept. 44-5. Seniority date April 5, 1951, retirement effective Nov. 7, 1962.

MONTEQUIN—Jose, Dept. 14-7. Seniority date Sept. 28, 1953, retirement effective Nov. 30, 1962.

RICHARDSON—John B., Dept. 21-3. Seniority date March 30, 1951, retirement effective Oct. 18, 1962.

TEMPLEMAN—Philip U., Dept. 292-2. Seniority date Aug. 21, 1941, retirement effective Nov. 30, 1962.

Births

CONVAIR

BOOP—Foster Scott, 8 lbs., born Dec. 20 to Mr. and Mrs. F. C. Boop II, Dept. 91.

GALLOWAY—Daughter, Peggy Ellen, 6 lbs., 6 oz., born Dec. 20 to Mr. and Mrs. David J. Galloway, Dept. 115.

OGNIBENE—Daughter, Renee Michele, 6 lbs., 14 oz., born Oct. 1 to Mr. and Mrs. D. F. Ognibene, Dept. 6.

Deaths

CONVAIR

WHITMAN—D. F. Sr., Dept. 16-4. Died Dec. 28. Survived by wife, Bernice; two sons, Ronald G. of El Cajon; D. F. Whitman Jr.; two grandchildren.

Personals

CONVAIR

I wish to express my thanks to my Convair friends for the floral tribute and their many kind thoughts on the passing of my father, C. V. Butterfield.
Wally Butterfield (Dept. 2-7) and family

* * *

My heartfelt thanks go to all of my Convair friends, especially those in Dept. 16, for the kindnesses shown me during the illness and death of my husband, George T. Sutton.
Mae Sutton (Dept. 16) and family.

* * *

We wish to express our appreciation and gratitude to the employees of Convair for their thoughtfulness in our time of sorrow, and for the many kind acts done in the memory of our beloved husband and father.
Mrs. James Hogan and daughters.

NMA Lecturer Will Address Clubmen Jan. 16

Ray Stanish, well-known National Management Association lecturer, will highlight the annual NMA meeting of GD/Convair and GD/Electronics Management Club with his talk on "Light—Speedy Historian of All Time."

Management Club members will gather Jan. 16 at San Diego Hotel, 339 West Broadway, with social hour at 5:30 p.m., followed by dinner at 6:30. Tickets, at $2.75 each, now are on sale at all regular ticket outlets.

Stanish, regional sales manager of TRW Computers Co., with headquarters at the Chicago office, has appeared before many groups during the last ten years speaking on such subjects as atomic energy, astronomy, computers. He is especially known for his technically correct, down-to-earth, humorous treatment of scientific topics.

Other features during the evening, sponsored by service parts and technical publications departments, include background music by Bill Green's orchestra during the social hour and dinner, presentation of Mug of the Month and MacSave-It awards, and surprise entertainment, said J. W. Ensign, general chairman.

Swissair Pilots Like 990A Performance

(Continued from Page 1)

communication service between the Swissair base and GD/Convair plant in California helped smooth the way during initial modification work, said Clause.

Swissair was the first airline to place the 990 in service in February of last year.

General Dynamics NEWS

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* * *

Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and GD/Telecommunication, editorial offices, 100 Carlson Road, HUbbard 2-2200, ext. 2555, Gordon Morison, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.

Registration For In-Plant Classes Opens

Registration now is open through GD/Convair educational services for 10 supplementary in-plant classes for the spring semester.

Courses, some carrying college credits, are held in conjunction with San Diego City College. All will be held within GD/Convair Plant 1 throughout the coming school semester term, ending in June. They start the week of Jan. 28, and are open to all General Dynamics people in the San Diego area.

Enrollment may be made through Wayne Turner, educational services coordinator, ext. 491, Plant 1, or by turning in registration forms now on bulletin boards within the plant.

Courses, days and time of class meetings, location, instructors are:

Blueprint Reading, Mondays, 4:30-7:30 p.m., Bldg. 14, Room 6. E. B. Milner, instructor.

Basic Electricity, Mondays, 4:30-7:30 p.m., Bldg. 38, Room 1 (CRA Clubhouse Bldg., Pacific Hwy.) Donald Munger, instructor.

Basic Electronics, Mondays, Wednesdays, 4:30-7:30 p.m., Bldg. 14, Room 5. T. S. Harris, instructor.

Basic Electronic Theory and Components, Tuesdays, Thursdays, 4:30-7:30 p.m., Bldg. 14, Room 6. Milner, instructor.

Technical Writing I, Mondays, 12:30-3:30 p.m., Bldg. 14, Room 8. Allan Walden, instructor.

Technical Writing I, Tuesdays, 4:30-7:30 p.m., Bldg. 14, Room 8. F. M. Linderman, instructor.

Technical Writing II, Tuesdays, 4:30-7:30 p.m., Bldg. 14, Room 7. Louie Henderson, instructor.

Technical Writing III, Wednesdays, 4:30-7:30 p.m., Bldg. 14, Room 8. Henderson, instructor.

Technical Writing IV, Thursdays, 4:30-7:30 p.m., Bldg. 14, Room 8. Henderson, instructor.

Mathematics and Basic Slide Rule, Wednesdays, 4:30-7:30 p.m., Bldg. 14, Room 8. Wesley Young, instructor.

Organizational Lines Shortened

A more streamlined top-level organization alignment was put into effect last week for General Dynamics/Convair, shortening lines of responsibility.

D. H. Digges was named director of contracts; W. R. Bruce, director of operations; J. S. Bergstrom, director of advance design; R. R. Hoover, director of programs; W. J. Martin, director of reliability.

They report directly to J. H. Famme, president, as do B. J. Simons, chief engineer, and D. C. Wilkens Jr., director of industrial relations, A. J. Chitiea, controller, and M. P. Lovett, division counsel.

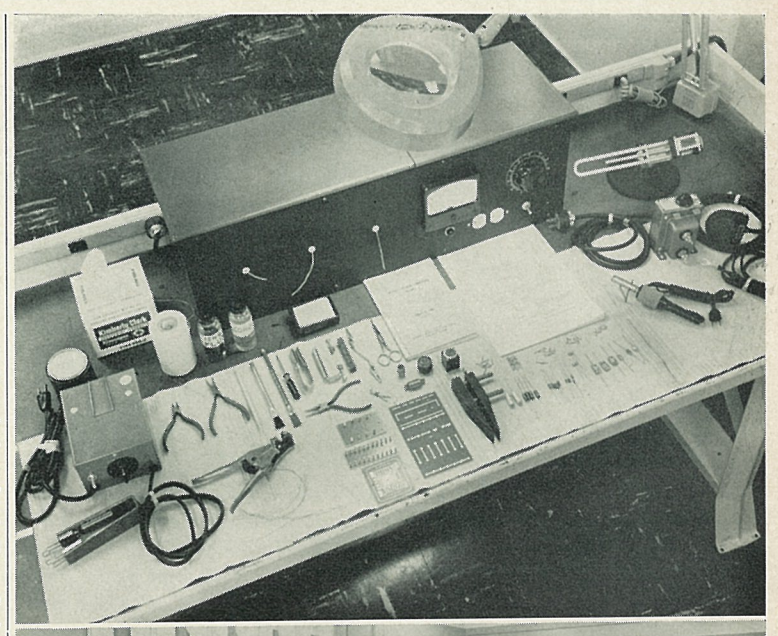
Wilkens, in addition to his industrial relations duties, assumes division administrative responsibilities formerly held by J. J. Alkazin, who has left the company.

R. A. Neale, formerly vice president and general manager, and R. M. Hatcher, formerly director of industrial engineering, have transferred to the Corporate Office.

Reporting to Digges as manager of publications and service parts is R. K. Gottschall, who will continue to direct public relations activities as well. Digges succeeds F. S. Chambers, who has transferred to GD/Astronautics.

H. P. Williams, as manager of value control, now reports to Martin.

The advance design section of engineering is a new one, and will be a separate engineering function, reflecting the division's in-increasing emphasis upon research and development programs.





NASA CERTIFIED—In top photo are tools and instruments used in NASA soldering classes. Below, first students use GD/Convair's newly-renovated soldering training facility which has received NASA approval. In background is L. E. Cook of educational services, one of two NASA certified instructors who will conduct training to NASA standards.

GD/Convair Facility Certified By NASA For Space Soldering

General Dynamics/Convair now has an officially certified National Aeronautics and Space Administration facility for training and certifying personnel who perform soldering operations on NASA space vehicle contracts.

Verbal approval of the facility was received following inspection in mid-December by the quality division representative from the NASA Western Operations Office in Santa Monica, Calif.

"We received a clean bill of health for the start of training classes in our newly-renovated facility," said H. W. Rubottom, chief of educational services. "We have full permission to conduct classes pending formal written certification."

The Bldg. 32 facility in Plant 1 has received a complete overhaul. Equipment and tools have been provided to meet NASA requirements for an approved soldering training school.

Items include variable voltage regulators for control of soldering iron temperature, magnifying type bench lights, wire dispensing cabinets, and a variety of special soldering aids for holding and positioning articles being soldered.

Materials used in the training conform to actual production parts and are kept in an adjacent store room especially provided for that purpose.

Training places great emphasis on the high degree of quality necessary for space vehicles. Exacting standards are observed for cleanliness and workmanship. Classroom arrangement provides ample work space for each student and presents a tidy appearance at all times.

Two NASA-certified instructors, Fred Lay of quality control and L. E. Cook of educational services, are in charge of instruction on soldering printed circuit boards, various terminal connections, preparing parts and components for soldering and handling of critical-type materials and parts.

A continuous schedule of classes is under way for all personnel, including supervision and inspection, involved in soldering, electrical connections, and related work on the Little Joe II launch vehicle program for NASA. First class was held the week of Dec. 17 with another begun first of this week. Each class runs for 40 hours, eight hours a day for five consecutive days.

In a follow-on program selected GD/Convair electric bench workers will be put through the training to qualify them to NASA standards. All successfully completing the course receive official NASA certification.

South America Trip Triumph

(Continued from Page 1)

legs were flown at Mach .85 to .86. Maximum speed was Mach .87 (630 mph) flown on a Rio to Sao Paulo flight.

Only maintenance item on the whole trip was replacement of a cut tire.

On the eight-day trip, in addition to Carrier and Knebel, were: R. M. Bloom, flight engineer; A. E. Hunt and W. G. Walker, flight test engineers; J. D. Donaldson, aerodynamics specialist; E. J. Griffin, service engineer; S. J. Barinka, field operations superintendent; P. A. Withnow, maintenance supervisor; Raymond Araiza, flight electrician; G. O. Spencer and M. A. Parker, flight mechanics; A. E. Montgomery, radio technician. General Electric's N. P. Krull Jr. also was aboard.

Arrangements and accommodations on the trip were made by VARIG Airlines Inc. of Brazil and GD/Convair personnel were enthusiastic in praising the smoothness with which trip details were handled.

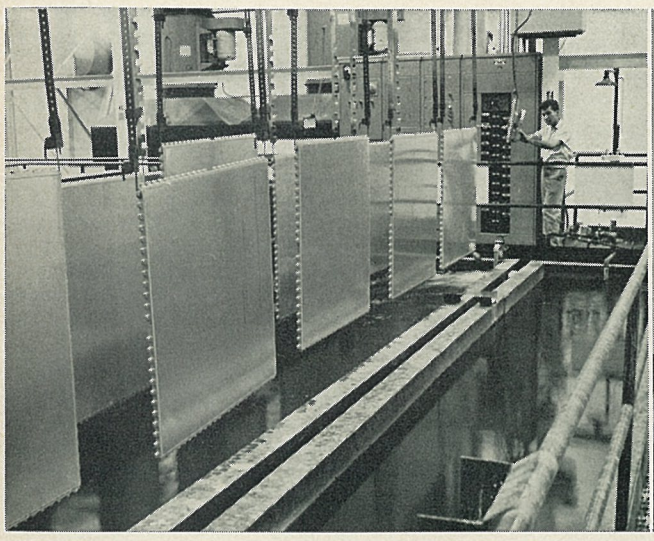
Longest of the 10 flights flown was 2,950 nautical miles between Rio and Panama City when the ship was homeward bound.

621 mph Cruise Set For 990A

(Continued from Page 1)

instant public acceptance and consistently led the airline's fleet of nearly 200 airplines in load factor (percentage of seats filled).

GD/Convair is manufacturing modification kits which will convert the 15 990s now in service with American into the improved type. During the year American will cycle 990s into its Tulsa maintenance base for kit installation. With completion of the program, American will have 20 990A Astrojets in its fleet.







TOUGH MATS—In center shot, C. L. Jackson, SATS mats program manager at GD/Convair (right), and P. J. Fitzgerald, art and editorial supervisor, examine first copy of brochure on airfield matting now going to potential customers following successful tests of new-type aluminum core landing matting. At left, test specimens hang like "washing" on a line as they are moved over alodyne tanks for dipping into protective solution. In photo at right, GD/Convair crew stands knee deep in mud as they lay panels during tests on soggy terrain. GD/Convair mats recently passed severe certification tests without failure.

Successful 'F' Launches Climax AF and Astro Blue Suit Training

CAPE CANAVERAL — Five consecutive successful launches of series "F" Atlas missiles from this installation by a special Air Force unit has climaxed an unusual training schedule.

Called the Blue Suit Training Program, the effort dates from February, 1961.

Involved were 14 Air Force officers, 129 airmen and three civil service engineers under the supervision of Maj. Jack F. Pierce, chief of Atlas Operations Section, 6555th Aerospace Test Wing. Capt. Robert L. Borland served as test conductor.

Playing key roles in the effort were General Dynamics/Astronautics engineers and technicians headed by John E. Hughes, launch operations manager for the Atlas weapon system project here, as well as members of associate contractors in the Atlas program.

Success of the Blue Suit program was heralded as early as December, 1961, when GD/Astro and 6555th ATW personnel teamed to set a record by launching two missiles (5-F and 6-F) in only 18 days.

Blue Suit training began at the onset of series "F" research and development efforts here. Air Force trainees were closely associated with Astro and contractor units through on-the-job experience while missile systems were being tested and improved.

Following their own training, key members of the military unit served as instructors for other Air Force personnel. Throughout the program, special courses were conducted by contractors.

Training in launch operations progressed from a time when Air Force personnel acted only as observers, to the point where they actually took over key operations involved, and GD/Astro men remained on hand only to give technical assistance.

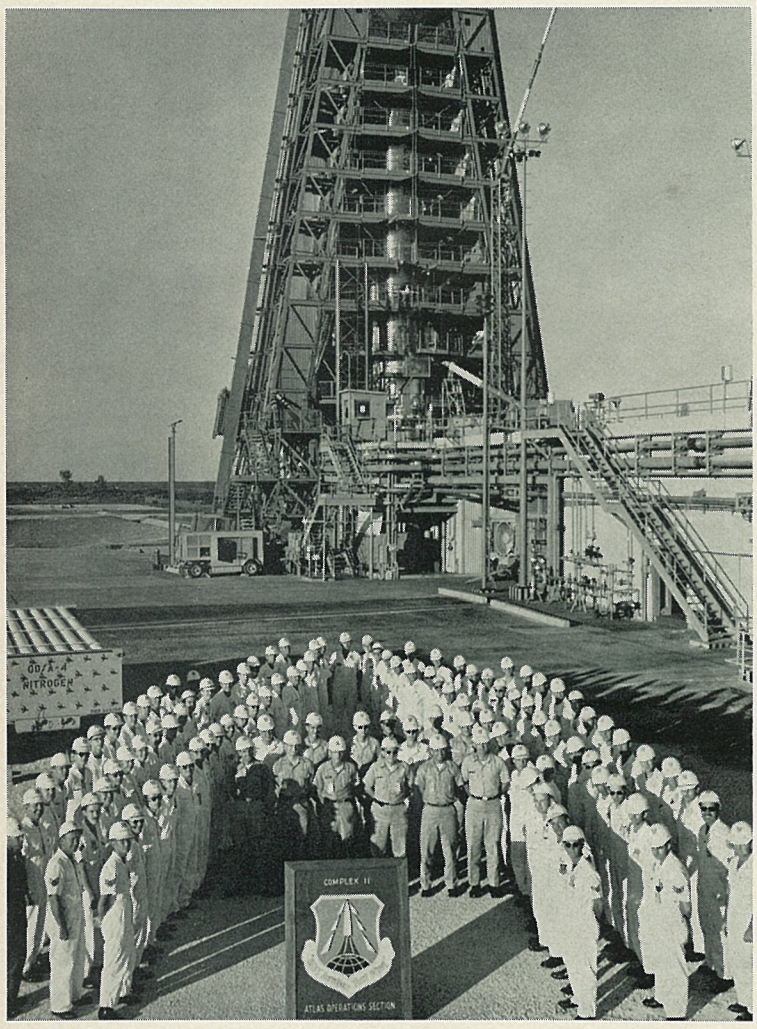
On Aug. 13, 1962, Air Force men manned key jobs for the successful launching of Atlas 7-F. This was followed by successful launchings of Atlas 8-F and Atlas 14-F during September and October, Atlas 16-F in November, and Atlas 21-F on Dec. 5.

Series "F" research and development flights, including those involving the 6555th Aerospace Test Wing crews, were made from Complex 11 here.

Academy Acclaims Dempsey, Bossart

General Dynamics/Astronautics President J. R. Dempsey and K. J. Bossart, technical director, were gold plate recipients at the Academy of Achievement banquet in San Diego late last month.

The two were honored for scientific achievement in space science and missilery. They were among 83 leaders in all phases of science and the arts from throughout the U. S. and Latin America to be honored by the Academy.



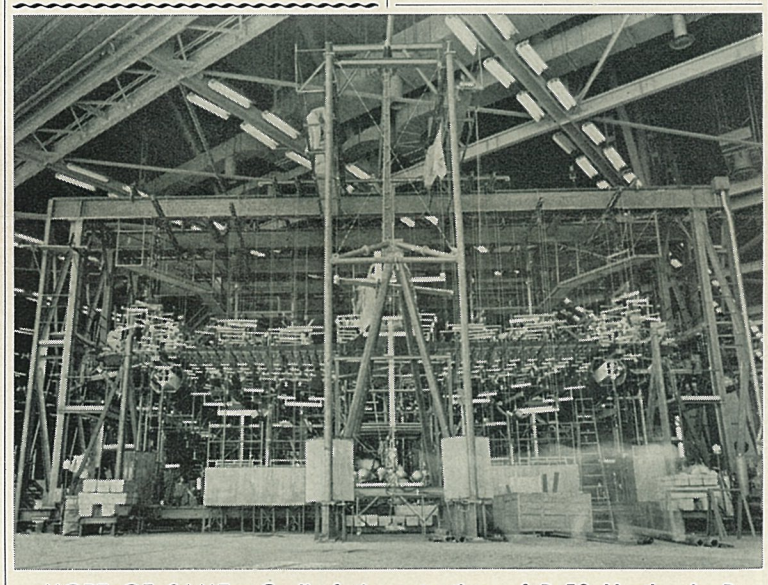
BLUE SUIT GRADS—Officers and men of Air Force 6555th Aerospace Test Wing, Atlas Operations Section, form ranks before "campus landmark" of Blue Suit training program at Cape Canaveral's Complex 11.

Social Security Tax Deduction Increased

Effective Jan. 1, increased Social Security taxes took a bigger bite of General Dynamic's pay checks.

Deduction is now 3⅝ per cent of the first $4,800 in wages—an increase of one-half of one per cent over last year's 3⅛ per cent tax. In practice it means each employee earning $4,800 or more will now pay $174 in Social Security taxes during the year instead of the previous $150 maximum. General Dynamics contributes a like sum.

Increase in the tax is necessary to cover increased costs of retirement and survivor's benefits which became effective last year.



MORE OF SAME—Cyclic-fatigue testing of B-58 Hustler in Bay Area "torture chamber" continues under new contract.

Cyclic-Fatigue Testing of B-58 Extended by New AF Contract

A $3.6 million contract for extension of cyclic-fatigue testing of the B-58 Hustler was awarded GD/Fort Worth by the U. S. Air Force recently.

The new testing will follow completion of the current series of fatigue tests on B-58 No. 29 in Bay 4 of the Development Hangar in about three months. The additional cyclic fatigue tests are expected to be completed in about 42 weeks.

"A 'lifetime' of flying and taxiing has been simulated in this current series," said H. D. Nolan, group engineer structural test laboratory. "Intent of the new series is to effectively duplicate this effort."

Testing is done by a series of whiffle trees attached to hydraulic cylinders, which are in turn linked with a nearby network of load programmers.

In simulating various gust conditions, different pressures are applied to different parts of the plane.

Furnishing load information for the new test series will be C. D. Little and J. E. Hejl, structures supervisors in the B-58 project group.

Nolan said that an accumulation of data through flights by B-58 Nos. 7 and 42, customer experience, and the first series of fatigue tests should provide more realistic data for the program.

"We anticipate some failures during this second cycle," Nolan said, "but this is really the purpose of such testing: to enable us to detect and correct trouble areas before they occur in flight."

In addition to the stripped-down structure of B-58 No. 29, loads programs will also be applied to various B-58 components in the bay area, including: a half-wing with structural variations from airplane 29; vertical fin; pod hook area; and forward fuselage.

"Modern demands on high-performance supersonic aircraft—including such maneuvers as low-level flight—make it mandatory that the Air Force be able to predict structural performance," Nolan said.



"Some lumber, nails, glass, a few dabs of paint and you've got yourself a new barn."

Firm 'Go-Ahead' Given To Build Test Field With New Type Mats

General Dynamics/Convair has received firm go-ahead on production of matting for one test field for the Navy as a result of highly successful tests on a new aluminum core mat, designed and fabricated by GD/Convair.

In making the announcement, President J. H. Famme said that production under the initial contract for the test Small Airfield for Tactical Support (SATS) will start within a few months on the automated assembly line now being installed.

Portable matting for airfields to be used by Marine jet fighters and close-support aircraft has been developed under study contracts from the Naval Air Material Center, Philadelphia, Pa., since spring of 1961.

First research culminated in a mat with a pressed wood core, weighing 159 lbs. Continued development, aimed at reducing that weight, has resulted in the present all-aluminum mat, lightening the mat assembly by 52 pounds.

Both the original mat and the lightweight aluminum mat have proved that they can withstand impact loads of modern fighter aircraft under the most critical conditions, said C. L. Jackson, SATS mats program manager at GD/Convair.

Both types successfully passed all roll tests at the Waterways Experimental Station (U. S. Army Corps of Engineers) at Vicksburg, Miss. Successful results of tests on the aluminum-core type were announced late last month.

"These tests are of the severest type, designed to eliminate any but the very best mat systems," stressed Jackson. "Ours completed all without a single failure. To our knowledge, this achievement is unmatched at this time!"

The basic all-aluminum mat is 4x4 feet in dimension, with an aluminum die cast case sandwiched between two aluminum skins. Connector bars interlock the panels into any size airfield. The basic 1½-in. thick mat can be altered in thickness and in core material to suit specific requirements.

This mat concept, with its non-directional structure, permits laying an airfield from many points at the same time, once the original line of mats has been established.

"With one simple tool, which is used to carry, position, and lock the mat into the airfield, any mat regardless of location, can be removed from an airfield and replaced in approximately two minutes," Jackson pointed out. "No welding, bolting, or riveting is necessary."

The aluminum mats will be assembled on the mat-a-minute line, now in final stages of completion in GD/Convair's Bldg. 2. The automated facility, or "translator" line, now geared for immediate production on the original wood core mat, will be adapted for assembly of the aluminum type by the time the die-cut cores are available, said Jackson.

"From an analysis of the potential market, there is considerable interest in this matting, both by the Marine Corps and other military agencies, both foreign and domestic," he continued.

Use of the matting certainly is not limited to portable airfields alone. They would be just as suitable for beach surfacing from vessel to shore, suspension bridges, heliports, floating docks, portable pontoons, bridge decks, points out a GD/Convair sales brochure now going to all users, and potential customers.



VERSATILE—Serving not only GD/Convair but other Dynamics divisions as well as outside firms is GD/Convair's versatile art and editorial section, headed by Pat Fitzgerald, far right at drawing board. In center: George Paul, designer and illustrator, consults with Nat King, writer, on brochure. At left: Carl Bair (standing), director of design group, goes over preliminary sketches with Jack Davis, illustrator. GD/Convair booth, designed in section, recently won honors in SD art competition.

Convair Art-Editorial Section Serving Variety of Customers

For the second time in that many years, General Dynamics/Convair's versatile art and editorial section of customer support has been named outstanding for entries in San Diego competition.

Award-winning is no new feat for Pat Fitzgerald's group of talented artists and writers, but latest honors hold more significance than most. Their display, designed to advertise the division's capabilities and products at a showing this spring in San Francisco, was tabbed best in the exhibit category at the San Diego Exhibition of Advertising and Editorial Art.

The display, set up at the San Francisco Western Space Age Industries Show in April, and later, at Plant 1 for all to see, contained actual specimens of the division's advanced work in various fields, with associated products already tried and tested. Alongside foremost manufacturing developments using exotic materials, a slice of an actual Convair 990 jet transport brought the far-out down to earth for spectators.

Though advertising GD/Convair's products is a main reason for being, the section has put together campaigns promoting everything from shrimp to jai alai during the last few months, many for customers outside of Dynamics.

Fitzgerald, who heads up the combined efforts of 11 illustrators and three writers, said, "We probably handle and put together material dealing with more different subjects than any other operation. And, the daily output is amazing, not only in amount but for its consistent uniformity and high quality."

Working steadily at top speeds is standard practice when a rush job is on hand. In emergencies, when they've been called on for "quick charts" to show customers, lights burn in the Bldg. 5 second floor area.

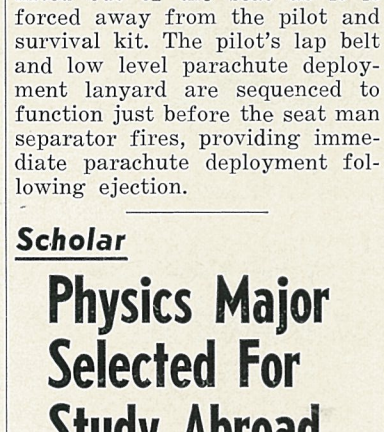
Though most of their work is for GD/Convair division — brochures, proposals, exhibits, posters, letterheads, flyers—a number of other customers, both in the Corporation and outside businesses, call on them.

For instance, since this spring they have prepared advertising campaigns for Ocean Garden Products, Inc., Jai Alai Fronton Palace in Tijuana, illustrations and art for GD/Astronautics, slides for General Atomic, and all promotional in-plant and outplant material for GD/Electronics.

Now, the section is easing the mysteries of printed matter by providing all departments a handbook explaining procedures of preparing different types of brochures, either those entirely researched, designed, written, and illustrated by art and editorial staffers, or with part or all of material supplied by other sources.

All of the illustrators and writers are well-prepared for their demanding and varied tasks with wide backgrounds of training and experience in their fields. Fitzgerald himself holds a degree in fine arts from University of Minnesota's Minneapolis School of Fine Arts. He came to GD/Convair over a year ago after several years in commercial art and design, including a stretch in the New York Times' promotion department, work as one of the art directors on Chevrolet's account with Campbell Ewald Advertising Co., Detroit, Mich., and free-lance designing in Los Angeles, not to mention a tour with the Marine Corps—in graphic arts.

Inquiries concerning preparation of brochures, advertising campaigns, sales promotional material, etc., may be directed to P. J. Fitzgerald, ext. 2366, GD/Convair Plant 1, for full details.



SHAKE-UP — Dummy goes through up and out gyrations during tests of GD/Convair-developed escape system for F-102 now being installed in craft by AF.

Low Level Ejection Seat Design For F-102 Works to Perfection

A new type of escape system, designed and developed at General Dynamics/Convair especially for the F-102 jet interceptor under an Air Force contract, now is proving its worth as it is being incorporated into the Convair-built planes.

Reports coming from actual use of the "seat man separator" show that it has been 100 per cent successful when used at altitudes for which it was designed.

Design of the new concept escape system was initiated almost four years ago at request of the Air Force for a system which would prove successful at altitudes of 1,000 feet and below. GD/Convair received go-ahead on production in the summer of 1960 with final shipment of modification kits made the first of 1962. Incorporation into F-102s based with AF squadrons all over the world will extend probably over the next year.

In two known ejections the seat man separator gained itself well satisfied "customers," whose lives hung on perfect operation of the system close to the earth. One pilot reported that he was down to 1,000 feet in a steep dive when he jettisoned the canopy, and dropped to 400 feet before he could squeeze the trigger to eject. He commented that "the F-102 escape system worked beautifully."

In the other episode, the aircraft actually made ground contact and bounced back into the air as the pilot ejected. Here again, positive seat man separation made it possible for the parachute to open and blossom long enough to deposit the pilot safely on the ground. He said, "the escape system worked just perfectly!"

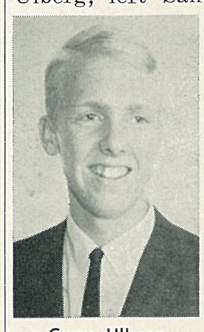
Most significant factor in the system is that it forces the seat away from the pilot.

The F-102 ejection seat has two straps attached to the front of the seat, routed beneath the survival kit and cushion on up the back of the seat to a rotary actuator. The rotary actuator is powered by a ballistic charge and fired immediately after ejection, rolling up the straps until they become taut. Thus, the pilot is lifted out of the seat as it is forced away from the pilot and survival kit. The pilot's lap belt and low level parachute deployment lanyard are sequenced to function just before the seat man separator fires, providing immediate parachute deployment following ejection.

Scholar

Physics Major Selected For Study Abroad

Cyrus Ulberg, son of Howard M. Ulberg, GD/Pomona, and Mrs. Ulberg, left San Francisco Jan. 3 for Stuttgart, Germany, where he will attend Stanford - in - Germany for the next two school quarters.



Cyrus Ulberg

Ulberg, winner of a General Dynamics scholarship in 1960, is a junior at Stanford University.

Selection to attend the tenth session of Stanford-in-Germany from January to June, 1963, was on the basis of scholarship. The only added expense for the winter and spring quarters will be transportation home in June and the cost of travel in Europe during a three-week holiday between semesters.

Ulberg, who was employed in the computing group (Dept. 6) last summer, visited with his parents during the Christmas holidays. He plans to spend the three-week vacation between semesters, March 16 to April 8, visiting relatives at Kolvereid, Namdalen, Norway.

Discount Offered On All Star Game

Employee services outlets at San Diego now have available free discount coupons good for $1 savings on tickets to the American Football League's All Star game Jan. 13 at Balboa Stadium.

When exchanged at Charger ticket offices, the coupons reduce regular $5, $3.50 and $2.50 tickets by $1 each.

In addition, parents of youngsters under 14 years of age may purchase adjoining seats in corresponding price ranges for only $1 each.

The All Star tilt pits outstanding players from Eastern and Western Division teams of the American loop in the final game of the year.

'Smile a Mile'

Father, Son Weekend Clowns; Play Hospitals, Orphanages

A General Dynamics employee and his son travel many miles each year, trying for at least "a smile a mile" from the many youngsters — usually shut-ins — they entertain.

Scrape the grease paint from Rollo & Son ("Clowns for all occasions," their card reads), and you'll find Roland Soucey, Los Angeles area distribution supervisor for General Dynamics' Liquid Carbonic Division, and his son, Leo, 15.

Operating from their Los Angeles home, the Souceys annually play benefit performances at hospitals and orphanages from Santa Maria to San Diego. (They put in a pre-Christmas appearance at San Diego's Mercy Hospital last month.)

The elder Soucey is a veteran of New England circus and carnival circuits.

"I started in the clown business when I was about 16," he said. "Since I joined Liquid Carbonic over 17 years ago, it's been a hobby, however."

Leo had a still earlier beginning; under his father's tutelage, he was performing by the time he was 12.

Wearing matching red and white baggy pants and traditional frill-collared jumpers, outrageous orange wigs, and grease paint smiles plastered from ear to ear, the two clowns "wow" their young audience by merely flapping into a room.

The big clown does magic tricks, while the little clown does all the hard work of entertaining (at least according to his father).

Balloons abound in their routine. Young Leo even uses them in a feature stunt which regularly "brings down the house."

Using long, narrow balloons, he gives them a twist or two to produce wildly colored "animals."

This fantastic menagerie is distributed among the young spectators—courtesy of Liquid Carbonic's "traveling clowns."

All in Miniature

Young SD Hobbyists Develop Collection of Unique Autos

Tinkering with cars, in miniature that is, has become big business for a GD/Convair son combine.

And, now that they've perfected their replicas of 30-year-old cars, they are going on to reconstruct the real thing for their own use.

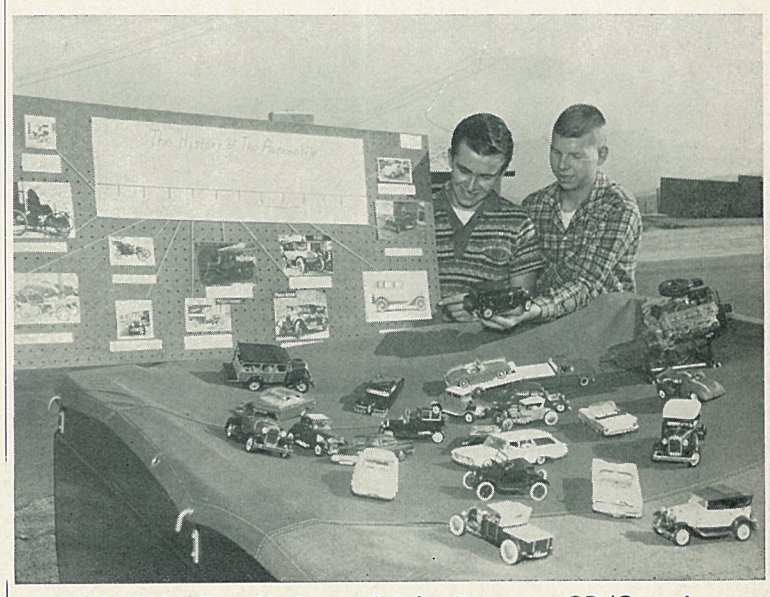
Tom Hurley, son of George Hurley Jr. (Dept. 16), and John Peterson, son of Ivar Peterson, spend their spare time (and some that isn't so spare, according to their mothers) building model cars.

Their hobby, begun when they were mere lads of 10 or so, has resulted in an extensive collection of faithfully reproduced models, ranging from a 1911 original stock Rolls Royce and 1930 Model A phaeton to a 1960 Falcon.

Although they might begin with a packaged kit, they use their own ingenuity and imagination to come out with an entirely different-looking car. They change motors, leave off fenders, install dual manifolds and cut down axles for dragsters, file off excess metal in cast models, swap parts, and choose their own color schemes.

Their collection was judged most creative from a standpoint of time, labor, and thought that has gone into it at a recent exhibit sponsored at the annual Border District Travel Trailers Club of America rally.

Both the teen-agers, Tom, 17, and John, 16, now are deep in building themselves 1930 Model As, prowling around auto dealer lots and junk yards for original parts that will make their "new" cars as perfect in every detail as their models.



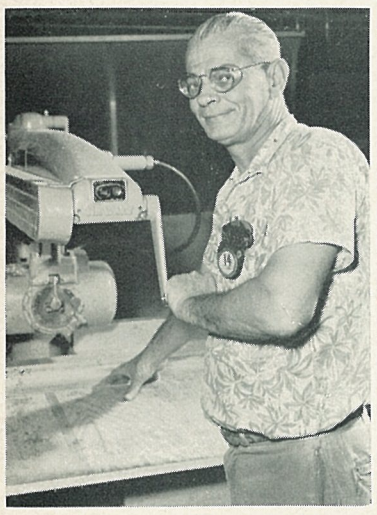
DESIGNERS—Tom Hurley and John Peterson, GD/Convair sons, snapped with their collection of model cars and pictorial history of automobile which won them first in recent exhibit competition.

Reliability Starts at 'First Cut' Of Materials For Production

"Reliability starts right here," says C. D. Duncan of GD/Convair first-cut operations at Rose Canyon. "If we're not careful, expensive material can be scrapped before it has a chance to get into the plant and on the production line.

"With us, reliability is a 'must.' We can't allow ourselves to get in a slump and slack off on any job."

Duncan, a set-up man under Paul Franks, Dept. 14-7 assistand foreman, has spent all of his 20 years with GD/Convair in first-cut functions. With his years of experience in first handling of material, he understood better than most the importance of doing the job right the first time long before he



C. D. Duncan (Dept. 14-7) cuts aluminum extrusion to length on De Walt cut-off saw in Rose Canyon first-cut section.

went through the division's "Space Age Reliability" indoctrination.

Every piece of material ordered for all projects in the division passes through first-cut section. Straight or flat parts are completed right there. Rough cuts are made on all contoured parts. Skins must be checked for scratches and bought off by inspection before they are put into work.

"Although we have always had a most reliability-conscious group of workers, we feel that it is highly important that we're reminded constantly of our responsibility to be as accurate as humanly possible," said Franks.

Astro to Get Canyon Space

An exodus of General Dynamics/Convair people from the Rose Canyon facility begins later this month as GD/Astronautics takes over part of the Pacific Highway location.

GD/Astro material departments will occupy the entire 43,000-square feet of office space in Bldg. 1. GD/Convair will retain warehouse portions of the facility.

Present plans call for some 250 GD/Convair office employees to vacate the Rose Canyon location by the middle of this month. They probably will make an interim move to Bldg. 19 before final relocation.

Those moving represent personnel in purchasing, material control, quotes and services, accounting.

Office functions remaining at Rose Canyon and relocated in factory areas are Navy inspection, quality control, salvage administration, material records, and industrial engineering.

GD/Convair Cancels Refund Program

General Dynamics/Convair's tuition refund program has been cancelled indefinitely, according to H. W. Rubottom, chief of educational services.

Cancellation will not affect approved refund applications covering the fall semester (1962). However, no new applications are being accepted.

The program may be reinstated at a later date.



990A ADDED—W. J. Martin, GD/Convair director of reliability (left), receives FAA Production Limitation Record adding Convair 990A long-range airliner to present production certificate. Center is L. E. Safford, FAA supervising inspector, San Diego; at right, Michael Brega, FAA manufacturing inspector.



GRADUATES—Three GD/Convair men received journeymen's certificates in mid-December after completing division's four-year apprenticeship program. They were Robert L. McHenry, aircraft electrical; Raymond N. Parra, airframe and power plant mechanic; Richard F. Stull, electronics. In photo (from left) are, McHenry, Frank Stevens, field operations foreman, Parra, W. T. MacCarthy, chief of aerodynamics lab, Stull, Joseph H. Stephenson, SD Junior Colleges dean of trade and technical education.



BIG EFFORT—Outstanding during GD/Astro year was completion of Atlas launch complexes and delivery to SAC. Off-site folk battled many "foes," including weather. Photo above was taken at Plattsburgh AFB where work went ahead despite heavy snowfall. Upper pictures illustrate three types of Atlas sites: left center, "soft" site where missile is stored horizontally; left top, semi-hard, where Atlas is housed horizontally, but all underground; top right: silo, where missile is stored vertically and all underground.

'Sell-Off' of 72 Launch Complexes A Major Astro Accomplishment

In the final four months of 1962 GD/Astronautics Atlas base activation crews wrote a fitting final chapter by delivering 72 launch complexes and support facilities to complete the program.

By comparison, 45 launch complexes were turned over in 1961.

Installation and checkout activities on 12 launch complexes at each of six silo or series "F" bases was completed from mid-September through mid-December.

Final "sell-off" came Dec. 19 at Plattsburgh AFB.

Thus, just four and a half years after ground was broken for the first all-operational Atlas base (Warren AFB) the program was essentially complete.

Now in the hands of combat crews of the Strategic Air Command are 129 Atlas launch complexes. For the series "D" weapon system there are interim gantry-type facilities (Vandenberg AFB only), plus "soft" sites at Vandenberg, Offutt AFB and Warren AFB. "Semi-hard" series "E" facilities are located at Fairchild AFB, Forbes AFB and Warren AFB. Rounding out the deterrent force are "hard" or silo sites with series "F" missiles at Schilling AFB, Lincoln AFB, Altus AFB, Dyess AFB, Walker AFB and Plattsburgh AFB.

Now on duty are 13 Atlas-equipped SAC Strategic Missile Squadrons at 11 different locations. Each base has a single squadron with the exception of Warren AFB where there are three.

Working to the closest possible time schedules, Astronautics base activation forces and those from associate firms have racked up some impressive "on time" accomplishments over the years.

Timing at Plattsburgh AFB is a good example. The first complex there moved into the installation and checkout stage Jan. 25, the final complex on May 11. The first Atlas arrived April 5 and the first "bird" went to a silo installation on Aug. 2. SAC took over the initial complex Oct. 4 and the final complex shortly before Dec. 19.

Weather played an adverse role throughout the program. Not only were employees forced to drive long distances to remote areas, but often had to work in extreme cold, snow and rain. At Plattsburgh one day the temperature dropped to a minus 47 degrees!

Throughout the four years of the program Astronautics families have been on the move to fill jobs calling for special skills. Some families moved to two and three different locations.

In a related program, Astronautics wound up exactly on schedule in performing the Golden Ram Follow On. This called for updating series "D" base facilities to incorporate latest changes.

Also during the year Astronautics product support personnel made final delivery of an extensive number of crew training devices designed to provide realistic training for men who now man Atlas bases.

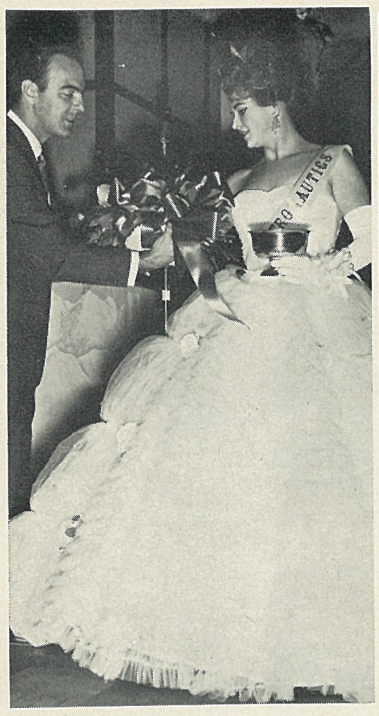
Second Shift Will Get Checks on Thursdays

Second-shifters at GD/Convair and GD/Electronics will be able to do their banking on Fridays, like other folk, with a change in pay days starting next week.

Beginning on Jan. 17, all hourly and flat-salaried people on second shift in both divisions will receive their pay checks on Thursday nights. Checks delivered that Thursday will reflect the pay period ending Jan. 13, J. L. Terrien, accounting payroll supervisor, pointed out.

GD/E WIVES MEET JAN. 17

General Dynamics/Electronics Wives Club will meet Jan. 17 for luncheon at Torrey Pines Inn. The affair is set for 12:30, with $2 covering tax and tips.



QUEEN OF ALL — Virginia Mateja of Astro accepts royal corsage from ARA Snow Ski Club President Hal Moore, as she is proclaimed Queen of Third Annual Sno Ball. Candidates from all area ski clubs vied for honor.

SPANISH STUDENTS ATTEND POSADA

A true Mexican posada, complete with mariachis and pinata, entertained 40 Spanish students in the ARA-CRA-sponsored course on Dec. 16.

Jim Hardison of Dept. 15, GD/Convair, instructor and goodwill "ambassador," had a full evening of entertainment arranged for his GD/Astro, GD/Convair, and GD/Electronics students at the Tijuana Country Club.

One of the highlights of the evening was appearance of a young boys' choir from the Sacred Heart Catholic Church. Following the dinner hour, San Diegans had the opportunity of joining the young people of the Orquidia Social Club at their holiday dance in the clubhouse.

Breaking the traditional pinata climaxed the affair.

The day before, Hardison with eight others of the Spanish course distributed carloads of toys, clothing, and food to 140 "newsboys" and members of their families at El Mexicano newspaper plant. This was the third year that Hardison's Spanish classes had helped make Christmas happier for the Mexican families.

Model Railroad Fans to Lead In Balboa Park Open House

General Dynamics model railroaders will be playing leading roles in local observance of National Model Railroad Week by virtue of their posts in San Diego Model Railroad Association, with which both CRA and ARA groups are affiliated.

Open house for the public will be held throughout the entire week, from Jan. 26 through Feb. 3, at Balboa Park's House of Charm, headquarters of model railroad operations in San Diego, said Karl Busch of GD/Convair, association president.

Assisting will be Bob Durnell of GD/Electronics, secretary; and board members, Bert Gowing and John Pinson, GD/Convair; James Hamill, GD/Electronics; and Bill Worthington of GD/Astro.

HO and O gauge operations will be held during open house hours which will be from 1 to 4 p.m. on Jan. 26, Feb. 2; 1-4:30 p.m. on Jan. 27, Feb. 3; and 7-9 p.m. on Jan. 28, 30, Feb. 1.

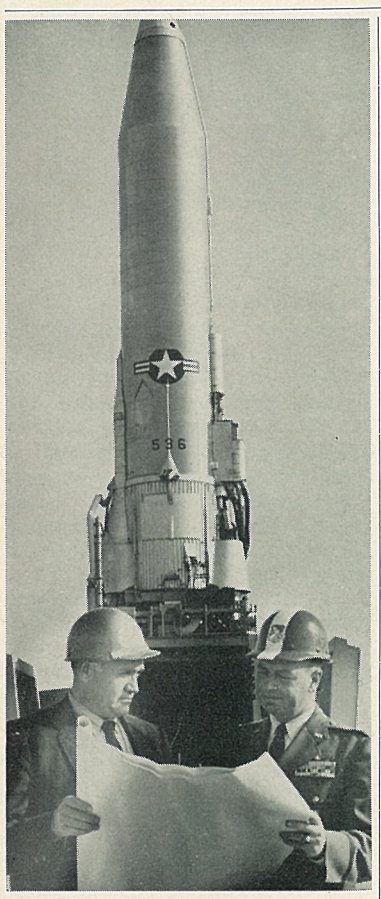
Visitors are encouraged to bring their own rolling stock to test-run on the layouts. A question and answer booth will be set up so that information can be passed to anyone on model railroading. Ways and means of improving modelers' stock or layouts will be available from experts.

On Sunday, Jan. 27, a continuous program of movies will be shown from 1 to 4:30 p.m. Door prizes will be given each hour on all open house days.

GD/E's James Hamill On Railroaders Slate

James Hamill of GD/Electronics was elected treasurer for the coming year of San Diego Model Railroad Association in recent elections.

Board members are all General Dynamics men: Karl Busch and Bert Gowing of GD/Convair; Bill Worthington of GD/Astro; Bob Durnell of GD/Electronics.



SILO SCENE—Although Atlas silo installations are normally associated with operational "F" series bases, they are in evidence at Vandenberg AFB also. Jim Copeland, Astro site manager for OSTF II, and Maj. Dave Haydes, site commander for 6595th Aerospace Test Wing, look over plans before Atlas 13-F. Latter was launched Nov. 14, marking third silo launch from Vandenberg AFB.

Joint Garden Club To Meet at Center

The joint ARA-CRA Garden Club will meet tonight (Jan. 9) at Ara-Chem Inc., 808 Gable Way, El Cajon.

The garden supply center is located two blocks east and two blocks north of Roaring Twenties. Starting at 7:30 p.m. the group will be shown the latest in gardening equipment.

Several representatives of garden product firms will be on hand to display and demonstrate their wares, and a rose pruning demonstration is planned.

Plant 1-2 Overpass Closes This Month

The vehicular overpass linking Plants 1 and 2 (Gate 20) has been closed until further notice.

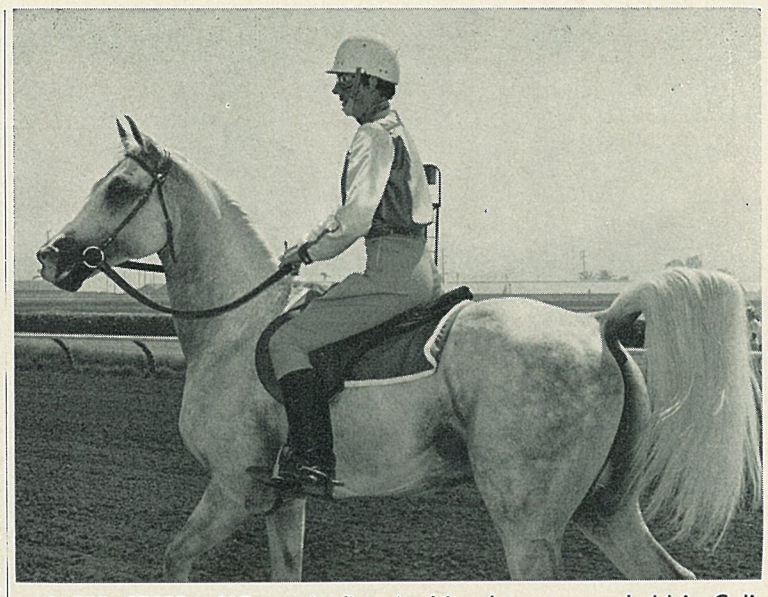
Dynamics Plant 2 employees have been asked to use Gate 28 (near the cafeteria) for both entering and leaving the plant on first and second shifts, Monday through Friday.

Gate 23 near the pedestrian overpass will be used at other times, and by third shift employees.

Invitation Issued By Toastmasters

Dynamics Toastmasters No. 457 has repeated its invitation to General Dynamics employees in the San Diego area to take part.

GD/Astro's R. C. Emerson is president of the chapter, meeting at 6 p.m. each Thursday in GD/Convair executive dining room. Management Clubs at both Convair and Astro assist in defraying costs of their members' participation in Toastmasters.



SPEED STEED—Winner in first Arabian horse races held in California was Mohaez ridden by Fran Farrell. Handsome seven-year-old stallion led field by two lengths.

Ice Skating Club Schedules Hockey Trip, Big Bear Weekend

While negotiations with San Diego ice skating arenas continue toward resumption of weekly skating sessions and free instruction, the joint ARA-CRA Ice Skating Club has announced a trio of other forthcoming events.

First on the agenda is a 9 a.m. to noon skating session at Paramount Ice Arena, Los Angeles, Jan. 13. Participants will provide their own transportation.

On Jan. 26, a bus load of skating fans will visit Los Angeles Sports Arena for the hockey game between L.A. Blades and San Francisco.

Reservations are now being accepted at both Astro and Convair employee services offices. Cost, including choice reserved seat for the game and transportation, is $7 per person.

A chartered bus will leave the GD/Astro reception center at 3:30 p.m., make a dinner stop at Knott's Berry Farm, and arrive at the arena by 8 p.m. game time. Participation is limited to 40.

The club's seventh annual Winter Weekend at Big Bear Lake will be held Feb. 8, 9 and 10. The entire Wawona Lodge has been reserved, and Gil Hutter, Prophet Co. cafeteria manager at GD/Astro, will again preside over meal arrangements.

Activities will include ice skating, skiing, dancing, and a pizza party. Price of two nights' lodging plus three meals is $11 per person. Reservations are being accepted at employee services offices at both divisions.

Additional information on skating activities is available from Commissioner Bud Davies, GD/Astro ext. 4041.

Salvage Schedule For Jan. Announced

Salvage yard schedule for next four weeks:

GD/Astro—Jan. 12, 26.

GD/Convair—Jan. 19, Feb. 2.

Dynamics Modelers Expected In Force For Jan. 19 Contest

All General Dynamics modelers will be out in full force to put their rubber-powered scale models through their paces at the coming CRA Aeromodelers free flight rubber-flying scale contest Saturday (Jan. 19).

Families of contestants from GD/Convair, GD/Electronics, GD/Astro are urged to come along to the Clairemont Mesa flying site to watch the fun, said CRA Commissioner Don Larsen.

"Activities will be provided for the wives and children, if they are not already addicted to modeling," promised Larsen.

Events will start at 8 a.m. and continue until 11 a.m.

All models must make a qualifying flight of 15 seconds. They must be hand-launched, but take-off points will be lost. Any number of flights are permitted.

If the model has an unusual color scheme or detail work, a drawing or photograph of the prototype should be furnished to aid in judging, Larsen pointed out.

Judging will be based on both flight performance and appearance, on a basis of 100 possible points in each category. Trophies will go to first place in two divisions—adults connected with General Dynamics divisions, and junior dependents. Merchandise prizes will be awarded other places.

For more information contact Larsen at ext. 2289 or Larry Peterson, Aeromodelers president, ext. 1477, both Plant 1.



TUNE UP—Larry Peterson, new president of CRA Aeromodelers, shows rubber-powered flying scale model of Messerschmidt BF-109, made by Commissioner Don Larsen, which will be entered in Jan. 19 contest.

GD/Astro Wife Rides Arabian For Race Win

Fran Farrell, wife of GD/Astro's R. M. Farrell, Dept. 974-4, is a winning "jockey."

In races held at Del Mar in conjunction with Desert Arabian Horse Club's annual all-Arabian show, she guided Mohaez, a seven-year-old, to victory in two half-mile runs.

Mohaez was imported last year from Poland by Charles Doner of Elsinore. The stallion had raced two seasons in Poland (where Arabians are as popular at the track as the Thoroughbred in the U. S.), was never un-placed, and set two track records.

At Del Mar, Mohaez led the field from wire to wire in both races, winning each by about two lengths. The races were the first to be held for Arabians in California.

Mrs. Farrell, like all other riders in the races, is strictly "non-professional." She first mounted Mohaez only four days prior to the races.

Hamann Chosen For GD/E Post

O. F. Hamann has been appointed design specialist for data products at General Dynamics/Electronics-San Diego, according to an announcement by General Manager John L. Lombardo.

In his new post, Hamann will do advanced product planning and development for GD/Electronics' high speed printers, cathode ray tubes, and various systems and devices which display and record information from computers or communications links.

During his seven years with General Dynamics, Hamann has held several research and engineering positions and assisted in the design of the CHARACTRON[R] Shaped Beam Tube and associated components now used in the SAGE air defense system.

He is a veteran of 14 years experience in research and development of information handling systems, having been employed previously by Transdata, Inc., Litton Industries, and the Armed Forces Security Agency.

A graduate of Carnegie Institute of Technology, Hamann also has done graduate work at the University of Maryland. He is a member of the Institute of Radio Engineers and holds several patents.

Institute Offering Study Scholarships For New Graduates

Scholarships in a course of study leading to an associate in science degree are now available from Electronic Technical Institute, 4863 El Cajon Blvd.

Grants are for tuition only, and may be renewed for up to six semesters. They are subject to review each semester, based on scholastic performance, attendance and citizenship.

Scholarship eligibility is restricted to recent graduates of local high schools. Details are available from the school's dean of students, C. L. Thacker. Application deadline is Jan. 15.

GD/Astronautics tuition refund program applies to courses offered at Electronic Technical Institute. The school has programs leading to a bachelor of science degree in electronic engineering, as well as the associate in science degree.

Graduate Program Deadline Nearing

General Dynamics employees wishing to enroll as graduate students in San Diego State College spring semester campus evening program have until Jan. 15 to apply for admission.

Registration for the evening program will be held between 8 and 11:30 a.m., Feb. 2, in the College Library.



HAPPY TIME—GD/Electronics couples from San Diego facilities join in holiday celebration at OceanHouse for first combined Christmas affair. About 500 enjoyed full course dinner, dancing to Bart Hazlett's band music, special entertainment, prizes. Center photo shows, from left, J. W. Colvin, manager of plans and programs; Mrs. J. L. Lombardo; Rex L. Brouillard, manager program administration; Mrs. Colvin; General Manager Lombardo; Mrs. Brouillard.

Larsen Joins CRA Council

Don Larsen will head three GD/Convair activities—Aeromodelers, Glider Club, and Solo Flyers—as new CRA commissioner, announced J. K. Field, chief of employee services.



Don Larsen

Larsen succeeds Gene Whigham who has directed the CRA groups during the last year. Whigham has left the company.

An avid aeromodeler, Larsen credits his father with arousing his interest in the hobby at the age of 7. From his first "model," a balsa propeller on the end of a hardwood dowel, he has expanded his modeling to scale models of a wide range of intricate craft.

With his appointment as commissioner, he will hand over his post as Aeromodelers president to Larry Peterson (Dept. 6).

Larsen has been with GD/Convair the last nine years, moving into service publications as an engineering writer after completing a four-year apprenticeship in aircraft construction. The last two years he has been a service engineer in transport service.

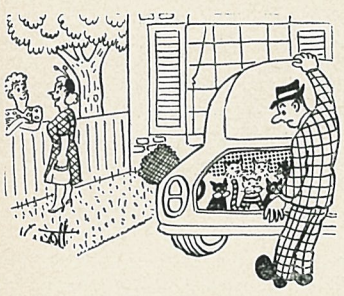
Al Reiter With 78 Wins CRA Low Gross

Six low scorers in CRA's November golf tournament received hams for their skill, said Commissioner Ken Wulfemeyer.

Winners of the monthly tourney over Coronado links Nov. 15-16 were: 0-15 flight—Al Reiter (Dept. 115), first low gross with 78; Bill Matlock (Dept. 6), first low net, 69.

16-22 flight—Pete Calta (Dept. 171), first low gross, 86; Oran Corral (Dept. 171), first low net, 67.

23 and over—Bud Buffett (Dept. 218), first low gross, 93; Ray Crothier (Dept. 400), first low net, 68.



"We had a nice visit but the Browns tried to give us some cats."

Sports & Recreation



SANTA'S VISIT — Santa Claus, looking suspiciously like Joe Sopko, was on hand to distribute gifts at CRA Road Runners Christmas party Dec. 21. Helping hand out presents are (from left) George Hurley Jr., president; Harry Rush, past president; CRA Commissioner Ralph East.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions each Saturday and Sunday, 7 a.m. to 1 p.m., Clairemont Mesa flying site. Rubber-powered scale model contest Jan. 19.

ARCHERY — Regular shoot Sunday (Jan. 13) Balboa Park range. Workshop open Tuesday nights by appointment.

BASKETBALL — Shop league tourney play Tuesday nights, Muni Gym, Balboa Park.

BRIDGE CLUB — Weekly sessions changed to new location. Play for General Dynamics people now held Wednesday evenings, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting tonight (Jan. 9), 7:30 p.m., at Ara-Chem Inc., 808 Gable Way, El Cajon.

ICE SKATING—Morning skating session at Paramount Ice Arena, Los Angeles, 9 a.m., to noon, Jan. 13. Trip to Los Angeles Sports Arena Jan. 26 to see hockey game. Weekend outing to Big Bear Lake, Feb. 8-10. For information call Bud Davies, ext. 4041, Astro site, or CRA, ext. 1245, Plant 1.

JUDO—Instruction and workouts for beginners and intermediates Thursdays, 7:30 p.m., CRA Clubhouse, Pacific Hwy.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75 cents; children under 12, 20 cents.

PISTOL CLUB—Next regular shoot Sunday (Jan. 13), 9:15 a.m., at San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Next meeting Jan. 24 at Harbor Drive headquarters, 8 p.m.

ROAD RUNNERS — Weekend outing Jan. 18-20 to Vallecito Stage County Park in Anza-Borrego area.

SPORTS CAR CLUB—Meeting and potluck dinner tonight (Jan. 9), 7:30 p.m., Gillespie Field Clubhouse.

TROPICAL FISH CLUB — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Golf Schedule for 1963

(It is suggested that GD/Convair and GD/Electronics golfers clip the following schedule for future reference.)

Jan. 5-6, Carlton Oaks Country Club.
Feb. 9-10, Bonita Country Club
March 9-10, Coronado.
April 13-14, Carlton Oaks.
May: Reserved for Industrial Recreation Association tournament.
June 9-8, Rancho Bernardo.
July 6-7, Coronado.
Aug. 10-11, Bonita Country Club.
September: To be scheduled.
October 19, 26, Nov. 2, Plant Championship, Carlton Oaks.
Nov. 9-10, Coronado.
Dec. 14, 15, Rancho Bernardo.

NOTE: Golfers must play in at least three monthly tournaments during 1963 to be eligible to compete in the plant championship.

CRA Sports Drivers To Gather Tonight

CRA Sports Car members will meet tonight (Jan. 9) for a potluck dinner and meeting at Gillespie Field Clubhouse. Dinner time is 7:30 p.m.

During the evening club members will inspect the new shop facility made available by Convair Recreation Association at Gillespie Field.

Road Runners (and 35 Children) Turn Out For Christmas Party

Seventy members and children of CRA Road Runners turned out for their annual Christmas party Dec. 21 at Gillespie Field Clubhouse. Santa Claus, played by Joe Sopko, greeted all, with warm welcome for the 35 children. All received gifts and candy.

Essie Weinberg led carol singing with Regina Wawrzynski at the organ. Several members were lucky winners of gifts given by George Hurley Jr., president. Carl Monds was released from the hospital in time for the Christmas celebration where he and his wife, Mary, celebrated their 33rd wedding anniversary.

Four members of the CRA trailer group, including Harry Rush, TTCA director, Elmer Becker, Bill Hamilton, and Hurley, will attend the annual Travel Trailer Clubs of American Rally and Convention in Pomona this coming weekend, Jan. 10-13.

Next Road Runners' outing is planned the weekend of Jan. 18-20 to Vallecito Stage County Park in the Anza-Borrego desert area. Bill Hamilton is wagonmaster with Hurley, his assistant.

Aeromodelers Sons Score In Contest

Good weather and an active turnout of modelers made the CRA Aeromodelers Christmas turkey "shoot" one of the most successful events of the season, reported Larry Peterson, club president.

High times in senior division for hand-launched gliders at the Dec. 15 affair went to Nat Antonioli, who took home the turkey, and CRA Commissioner Don Larsen.

Junior division was won by Kyle Jensen, son of Jack Jensen (Dept. 6). Kyle was awarded a Fox .049 engine. Other sons making good showings with their models' performances were Robert Boden, son of Dean Boden of thermodynamics, and Steve Nissley, son of Paul Nissley of structures engineering.

Bridge Players Find Permanent Home At Plant 1 Location

Bridge fans at GD/Convair and GD/Electronics now have a new permanent home and a new meeting day for their weekly sessions.

Through CRA arrangements, bridge players will be able to use the executive dining room in the Convair cafeteria on Pacific Hwy. Starting last week the weekly gatherings are held Wednesdays at 7:30 p.m., announced Frank Westphal, president.

Everyone at the GD/Convair and GD/Electronics divisions is welcome to attend to brush up on his bridge or take part in play for master points. Westphal will be on hand to direct proceedings and instruct.

Fee is a nominal 25 cents per person a night and 50 cents for Master Points night, held the fourth Wednesday of each month.

Winning Streak Earns Award

Art Ratz of GD/Convair Management Club is first pin-toppler in the current Management Club bowling league to win the new American Bowling Congress award for a one-shot winning streak.

Ratz (Dept. 35-0) became a member of the "Century Club" by knocking over 100 pins more than his average to score 245 in a recent game during league competition at Clairemont Bowl.

Fourteen teams are now competing in Management Club league play every Monday evening at 6:30 p.m. Ten are entered by GD/Convair, one from GD/Astro, two from GD/Electronics, and one from Advanced Structures of La Mesa.

Present Management Club league bowling will decide entries in the NMA Zone A tournament in March which will match top teams from Southern California, Arizona, and New Mexico, explained Harry Lund, NMA bowling commissioner for Southern California area and secretary-treasurer of the local Management Club league.



"CENTURY" MAN—Pat Carlton of GD/Convair, president of current Management Club bowling league, positions ABC Century Club patch on Art Ratz, also GD/Convair, for rolling 100 pins over average in recent game, as Ratz' boss, G. W. Zahrte, manager of procurement, offers congratulations.



MAKING THEIR MARK—A human dollar sign, formed by GD/Convair men who completed latest value control seminars in division's continuing program, points up goal of value vs. cost training—dollar savings.

Value Control Books Published For Use Throughout Industry

Programmed instruction for value control training will be issued in published form this month, H. P. Williams, manager of value control at General Dynamics/Convair, announced.

Publication of the complete set of five books, comprising the series for a value control program, culminates months of formulation and evaluation through joint efforts of technical publications, educational services, and value control groups.

The brochures, outlining value control techniques and principles in step-by-step form, will be made available to top management of aerospace and other types of industries concerned with establishing value control programs. At least 40 inquiries have already come to Williams, indicating the widespread interest in such instruction.

Use of the programmed instruction in value control seminars at GD/Convair has proved that learning time can be cut; number of lectures reduced; classtime made more flexible so that groups can be cycled through the training continuously; immediate analysis made of current programs and business proposals.

Twenty-six GD/Convair men completed the division's 11th full term workshop seminar the end of the year to total 435 who have received value vs. cost indoctrination since the program was stepped up in the fall of 1961.

In addition, 236 top management and key personnel have completed the "quickie" capsule course of 6 to 8 hours. Most of these will go through the complete workshop course as schedule permits.

Next seminar at San Diego will begin the middle of this month with at least one a month slated in the coming year's program.

Survey Under Way On TCU Curriculum

Registration for TCU spring semester courses to be held at GD/Fort Worth will be from 2 to 6 p.m., Jan. 17 in Room 113 C. Classes start the week of Jan. 31.

Officials from TCU will be available for both registration and counseling.

Courses leading to various management certificates, and to both bachelor's and master's degrees are tentatively being offered. The program is sponsored jointly by the GD/Fort Worth Management Club and TCU.

A survey sheet listing about 70 possible courses to be offered is now being distributed.



Computer Used For Cataloging By GD/Astro Support Publications

Machines don't write books—yet!

But a unique system developed at General Dynamics/Astronautics during the final months of 1962 has made the computer an important tool for engineering writers.

The result is one of industry's most efficient technical cataloging techniques.

Last August, a team comprised of members from support publications, business data processing, and organization and systems began a study aimed at streamlining GD/Astro cataloging operations.

Their targets were two publications supporting the Atlas program: Illustrated Parts Breakdown (IPB) and Provisioning Parts Breakdown (PPB).

Very simply, the first provides identified illustration of missile system parts, while the second is a tabular listing of parts with detailed descriptions of each.

Although some 60 per cent of the information in each manual also appears in the other book, a separate support publications group was required to maintain each—analyzing engineering drawings, listing parts, editing, etc.

Team members reasoned that a data processing system could be used to collect all information for both books, sort it, and then print it out selectively. This would eliminate most areas of duplication between the two groups.

Working at break-neck speed, the interdepartmental team refined the system, developed and tested computer forms, and indoctrinated publications personnel involved. By December, a new organization built around the system was set up as support publications integrated documentation (Dept. 322-4) in Bldg. 2 at Plant 2, San Diego.

The section combines formerly independent IPB-PPB groups under B. H. Michael, reporting to D. W. Rogers.

Basically, all IPB-PPB data are now fed into an all-tape IBM 1401 computer system.

From the resulting integrated master tape, the computer produces 10 different outputs, selectively. These are a master parts list, standardization list, master integrated numerical index, PPB and IPB numerical and reference designation indices, provisioning parts breakdown, group assembly parts list and IPB vendor code list.

The system provides improved reaction time, and will result in savings of over $1 million. Quality and uniformity of the manuals themselves have been greatly improved.

Chairman of the team responsible for the new operation was W. J. Raftery of organization and systems. Team members were J. R. Cash, Mary Pearce, V. D. Stewart, Fran Simmons, Bernice Whitney and R. A. Perkins of support publications, and F. H. Benson, business data processing.

Extensive computer programming required was directed by Supervisor V. A. Vella of data processing, assisted by Benson, a senior programmer, P. S. Murphy, Carol Minter and J. D. Thomas.



NEW TECHNIQUE—At top, Supervisor Vic Vella explains computer used in preparation of technical manuals to A. H. Gross and D. W. Rogers of product support. Below are members of team that developed new technique, Frank Benson, Bill Raftery, Roy Perkins, John Cash, Mary Pearce, B. H. Michael.

IAS Will Hold Last Meeting

Institute of the Aerospace Sciences (IAS) will hold its last annual meeting Jan. 21-23 in New York City. IAS has merged with the American Rocket Society (ARS) to form the American Institute of Aeronautics and Astronautics (AIAA).

Among General Dynamics men taking part in the New York sessions are J. Y. McClure, corporate director of reliability and quality control, and N. H. Simpson, GD/Fort Worth reliability manager, who will discuss "Reliability contributions to the B-58 Hustler." Jerome J. Brainerd, senior aerodynamics engineer, GD/Astronautics, will read a paper on "Viscous and non-viscous hypersonic flows with finite-rate chemical reactions" while Charles C. Love Jr., design specialist, also of GD/Astro, will discuss "Cryogenic tank thermal design for planet missions."

Calif. Disability Rates on Increase

General Dynamics employees working in California will pay higher state disability insurance rates during 1963 as a result of action taken by the California State Legislature.

Effective with initial 1963 pay checks, employees will pay one per cent of the first $4,600 earned during the calendar year. This is up from the old rate of one per cent of the first $4,100 earned.

GD/Pomona's Sawyer To Present Paper

H. F. Sawyer of General Dynamics/Pomona (Dept. 6) will present a paper entitled "3-D Welded Module Design and Manufacturing Control Parameters" at the Electronics Component Conference, Washington, D. C., May 7-9.

Modern Computer Techniques Applied to Planning in Shop

A technique for preparing shop planning quickly and accurately through use of modern computer methods—believed to be the first large scale application of its kind in the aerospace industry—is now in use at General Dynamics/Astronautics.

Electronic data processing programs are being used to process detail, assembly, installation and subcontract planning, previously prepared entirely on handwritten documents.

Basically a tooling program, the system will also support material, production control, cost control, performance reporting and configuration management functions.

Combined efforts of several GD/Astro departments were involved in program development. These include organization and systems, M. F. McDonald, manager; production engineering, G. A. Grossaint, manager; and data processing, C. E. Diesen, manager.

Heart of the system is a specialized planning document called a Planning Control Sheet (PCS). This contains all necessary information about a given part: materials, tools, operations, effectivities, etc.

The PCS is prepared by tool and operations planners. Then it goes to data processing where PCS information is key-punched into tab cards.

Cards are fed into IBM 7074 and 1401 computers which compare the information against rigid specifications.

If the comparison is satisfactory, computers print out shop order data, installation planning documents, operation inspection logs and "make or buy" authorizations.

Should the machines detect an error, they print instructions for corrective action. These instructions are returned to planners who revise the PCS accordingly.

(General system concepts stem from earlier studies at General Dynamics / Convair, where the PCS is being used in production of empennages for the C-141 Air Force jet cargo plane.)

"Essentially, the computer technique reduces a formerly tedious, time-consuming manual task to a fast, error-free automated system," said F. J. Gosselin, organization and systems supervisor, and chairman of the team which developed the technique at GD/Astro.

"Computers perform the thousands of steps required to check and file a PCS in less than a second, and simultaneously prepare both tape output for printing shop paper, and tapes for other applications," explained G. R. Jacob, data processing general supervisor.

"The final printing moves at a rate of 600 lines a minute," he added.

Gosselin's interdepartmental team accomplished the task of analyzing and defining more than 20,000 processing steps, each of which had to be carefully sequenced and translated to "computer language."

Team members included H. L. Prettyman, tooling representative; J. S. Dodds, systems analyst; R. G. McNutt, senior programmer; and a programming crew of W. J. Calkins, F. L. Cox, J. J. Goertz, E. C. Walsh, and G. H. Yamada.

GD/Pomona to Hold 23rd Value Seminar

General Dynamics / Pomona's 23rd value engineering seminar will be held Jan. 14-25.

Three value improvement projects have been selected for the January seminar, J. W. Corr of educational services, said. Corr will be seminar coordinator.

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GD

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

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ASSIST TEAM—Five of the six GD/Convair men going to American Airlines' overhaul base to assist throughout conversion of 990 Astrojets to the A version are from left: F. S. Pyatt, L. C. Hare, V. O. Kettler, J. R. Horner, J. R. Crenshaw. Missing was A. W. Koster.

GD/Convair Mod Team Will Help Update 990s

A team of General Dynamics/Convair men began a cross-country trek last week to American Airlines' Oklahoma base in anticipation of start of modification of American's 990 jetliners to the updated version.

Within the next year all 15 of the Convair-built Astrojets now in service will be cycled through the modification program one at a time as they are converted to the 990A configuration.

First aircraft will go into the 990 Performance Improvement program Feb. 18 at Tulsa Overhaul and Maintenance Depot with a target of six weeks set for completion. Following planes will be run through at a faster rate, with the work force of American's overhaul personnel building up from 50 to a peak of 135 by the time the third plane enters the program.

On site to give technical assistance and advice during modification of the first three planes will be J. R. Crenshaw, field service representative, heading GD/Convair's assist team of A. W. Koster, field service rep.; J. R. Horner from tooling; F. S. Pyatt and L. C. Hare, factory representatives; and V. O. Kettler, liaison engineer.

Crenshaw, Horner, Pyatt, Hare were to be at Tulsa by the time the first modification kit and tools arrived this week to help plan the work area and set up fixtures. Some 70 fixtures and assembly tools necessary for the work went out with the first kit leaving the San Diego plant.

All six of the GD/Convair men will be at Tulsa during conversion of the first three planes with Crenshaw and Koster remaining to coordinate the latter stages of the program.

Three—Crenshaw, Horner, and Pyatt—go into American's modification program with experience gained on a similar tour of duty last fall with Swissair at Zurich, Switzerland.

Delta 880 Sets Two Unofficial Records

A Delta Air Lines Convair 880 established two unofficial speed records during a Houston to New York scheduled flight on Jan. 15.

It marked up the fastest elapsed time, 2 hours, 4 minutes, 50 seconds, for the 1,463-mile flight. Also, this was the first time a commercial jet transport has averaged more than 700 miles per hour ground speed from time off to time on, said Delta officials.

The Convair-built jetliner averaged 702 miles per hour and reached a top ground speed of 756 miles per hour.

Previous unofficial record over the route was 2 hours, 9 minutes, set by a Delta Convair 880 on Dec. 22, 1960.

Dept. Numbers Realigned

A realignment of department numbers and titles within General Dynamics/Convair became effective Jan. 7, adding functions for new in-house projects and eliminating others now phased out.

Names and numbers now in use are: President's office, Dept 2; industrial relations, Dept. 3. Material and production services includes Depts. 4, 14, 34, 41, 42, 43, 44.

Individually, these departments are: Dept. 4-0, material and production services management; Dept. 14, traffic and stores; Dept. 34, purchasing; Dept. 41, transportation; Dept. 42, manufacturing control; Dept. 43, material costs and services; Dept. 44, material control.

Dept. 5 is program planning and control. Engineering remains Dept. 6. A new department and number is program management, Dept. 7.

Contracts comprises Depts. 11, 15, and 16. These are, respectively, contracts, service parts, and publications.

Industrial engineering now includes Depts. 20, 23, 25, 26, 27, 28.

Dept. 20-0 is industrial engineering management; Dept. 23, methods and manufacturing research; Dept. 25, plant engineering; Dept. 26, telephone and mail operations; Dept. 27, data proc-

(Continued on Page 2)



MEMENTOS—From left, Roger Olson, GD/Electronics-San Diego Systems engineer; Carroll Wright and Jim Bissell, Tallmantz Aviation Co. flight engineer and pilot respectively, receive souvenir certificates from General Manager John L. Lombardo on recent completion of current series of GD/E terrain following radar test and demonstration flights which have taken B-26 and crew over entire country during last several months.

$733,000 Target Set For ESs, CIPs During Year 1963

A goal of $733,000 savings from Employee Suggestions and Cost Improvement Proposals has been set for General Dynamics/Convair during 1963.

"This is an ambitious target," said R. D. Marks, chief of methods and manufacturing research and development. "But it can be met, and surpassed, if all employees will give us the benefit of their creative thinking and submit all ideas that will reduce labor, material, or procedures costs in our operations."

ES/CIP savings targets assigned to individual departments for the year are: Dept. 3, $25,000; Dept. 4, $25,000; Dept. 5, $2,500; Dept. 6, $50,000; Dept. 7, $2,500; Dept. 11, $3,000; Dept. 14, $20,000; Dept. 15, $35,000; Dept. 16, $10,000; Dept. 25, $25,000; Dept. 26, $15,000; Dept. 27, $15,000.

Dept. 34, $75,000; Dept. 41, $10,000; Dept. 42, $30,000; Dept. 43, $5,000; Dept. 44, $20,000; Dept. 48, $40,000; Dept. 91, $15,000; Dept. 93, $5,000; Dept. 97, $5,000; Dept. 400, $15,000; Dept. 401, $30,000; Dept. 101, $35,000; Dept. 102, $10,000; Dept. 105, $15,000; Dept. 115, $35,000.

Dept. 119, $10,000; Dept. 123, $10,000; Dept. 128, $10,000; Dept. 129, $7,500; Dept. 131, $40,000; Dept. 133, $5,000; Dept. 140, $20,000; Dept. 141, $20,000; Dept. 149, $15,000; Dept. 171, $20,000; Dept. 179, $2,500.

Last year the division, as a whole, attained 83 per cent of its total goal with a dollar savings of $1,388,802.

Of the 690 Employee Suggestions and 439 Cost Improvement Proposals submitted, 286 ESs and 227 CIPs were approved and installed. Employees received awards totaling $11,103.10 for approved ESs with averaged payment amounting to $38.82.

Twelve departments went well over their objectives with Dept. 34 hitting the fantastic figure of 1,606 per cent.

Other departments exceeding their goals were: Dept. 280, 389 per cent; Dept. 48 (quality control), 317 per cent; Dept. 401, 243 per cent; Dept. 4, 238 per cent; Dept. 27, 225 per cent; Dept. 44, 204 per cent; Dept. 95, 197 per cent; Dept. 25, 179 per cent; Dept. 201, 137 per cent; Dept. 45, 125 per cent; Dept. 14, 109 per cent.

GD/Electronics division employees submitted 219 Employee Suggestions and 19 CIPs during 1962 with 78 ESs and 4 CIPs installed for an indicated savings of $17,538.

Employee Suggestion award payments totalled $1,884.90. Average payment for an approved ES was $24.16.

Effective Feb. 1, GD/Electronics systems and procedures department now evaluates all Employee Suggestions and Cost Improvement Proposals for the GD/E division.

Savings targets for GD/Electronics department will be established soon for the current year. ES and CIP receipts during the month of January indicate an ever-increasing interest in the savings program, Marks said.

"Overall ES and CIP savings totals for 1963 should far exceed those realized in 1962," he continued. "Active participation in the program by all employees of GD/Electronics will assure this."

To Cut Costs, Survey Phones

All GD/Convair departments are urged to join in a voluntary drive to reduce telephone costs and make more lines available on the division's switchboard.

In a recent notice going to all department heads, President J. H. Famme strongly recommended a review of all phone requirements to be sure that extensions in use are fully justified.

A rule-of-thumb ratio of four persons to an instrument is used in office areas. One phone can serve many more in production areas, explained B. W. Kahla, chief of systems and procedures.

"Since the GD/Convair switchboard must service all Convair, Astro, Electronics persons at Plant 1, we need every possible line," he said. "In fact, when Bldg. 19 is reoccupied, our switchboard will be fully loaded."

Departments are asked to do their own surveying and call Resources Economics, ext. 1640, Plant 1, on locations of lines and instruments which can be removed.

Mfg. Control Tops Safety, Housekeeping

Manufacturing control forged ahead in good housekeeping and safety standings during the last six months of 1962 to top all GD/Convair departments in the yearly contest.

The department (now Dept. 42) went nine months without an injury in the safety portion of the contest. It recorded perfect scores during three quarterly inspections for good housekeeping.

Second in overall standings was material. Tied in third place were field operations, Plant 2 fabrication, and experimental.

Six GD/Convair and GD/Electronics departments had clean slates for three quarters during the year in good housekeeping. Besides manufacturing control, these were field operations, GD/Electronics machine shop and fabrication, material, fabrication at Plant 2, and experimental, said M. C. Val Dez, in charge of GD/Convair safety activities.

Housekeeping inspections are held each three months for cleanliness, material handling, fire precautions, safety items. Safety scores are recorded monthly on number of doctor's cases resulting from injury.

Horne Will Address Club at El Cortez

Management Club members at GD/Convair and GD/Electronics will gather tonight (Feb. 6) at the first meeting sponsored by GD/Electronics.

C. F. Horne, president of GD/Pomona and GD/Electronics—San Diego, will be main speaker following the 7 p.m. dinner in International Room of El Cortez Hotel. Social hour begins at 6 o'clock.

Monthly Mug of Month and MacSave-it awards will be presented.



"SAVE" EXPERT—B. W. Kahla of GD/Convair (left), president of SD chapter, Society of American Value Engineers, greets Larry Miles, known as "father" of value engineering, who was featured speaker at Jan. 25 SAVE meet, describing background and history of value analysis movement.

Department Numbers, Titles Are Realigned

(Continued from Page 1)

essing; Dept. 28, systems and procedures.

Dept. 48 is reliability and quality control.

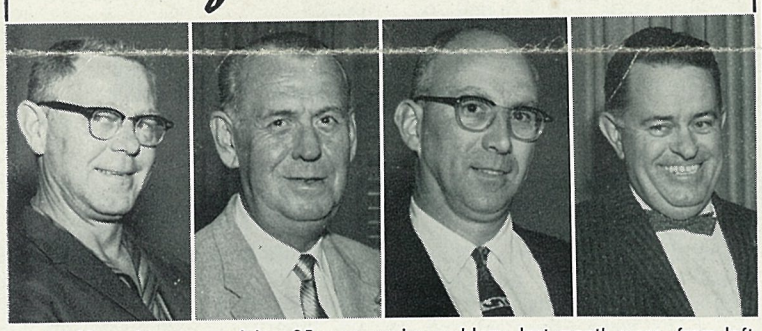
Depts. 90, 91, 92, 93, 95, and 97 are under division controller. Controller's office is Dept. 90-0; Dept. 91-0, general accounting; Dept. 92-0, indirect budgets. Dept. 93 is cost accounting; Dept. 95-0, project budgets and financial analysis; Dept. 97, estimating.

Manufacturing covers Dept. 100-0, manufacturing management; Dept. 101-0, sheet metal; Dept. 102-0, processing; Dept. 105-0, Mats manufacturing; Dept. 115-0, machine shop; Dept. 119-0, metalbond fabrication and assembly; Dept. 123-0, welding and assembly; Dept. 128-0, plastics; Dept. 129-0, trim; Dept. 131-0, experimental; Dept. 133-0, fuselage and wing structure; Dept. 140-0, pod and pylon assembly; Dept. 141-0, C-141 empennage assembly; Dept. 149-0, non-current spares; Dept. 171-0, field operations; Dept. 179-0, jet transport post production services.

Dept. 400 now is tool engineering and Dept. 401 is tool manufacturing. Dept. 311 is designated White Sands.

All former Plant 2 department numbers have been eliminated with the transfer of that facility to GD/Astronautics.

Log Book Entries



GD/Convair men receiving 25-year service emblems last month were, from left, H. F. Bauman, Dept. 101; J. H. Villain, Dept. 400-1; J. A. Stevens, Dept. 23-2; who received their pins from W. R. Bruce, director of operations, and G. M. Graham, Dept. 48-36, whose presentation was made by W. J. Martin, director of reliability.

Service Emblems

CONVAIR

Service emblems due during the period Feb. 1 through Feb. 15.

Twenty-five-year: Dept. 6-300, Frank Machado Jr.; Dept. 401-4, W. H. Poschman.

Twenty-year: Dept. 16-4, W. A. Carter; Dept. 115, G. M. Calahan; Dept. 129, W. D. Lavis; Dept. 141, John Alvarez; Dept. 171, W. D. Arrasmith, R. S. Lindstrom.

Fifteen-year: Dept. 14, P. C. C De Baca, Joan B. Bennett; Dept. 27-6, C. H. MacDonald; Dept. 93-0, Annabelle E. O'Brien; Dept. 97-2, D. S. Lauder; Dept. 102, Matthew Console; Dept. 115, Clifton Brown; Dept. 133, G. B. Broderick; Dept. 140, R. L. Denmark; Dept. 141, D. E. Allman; Dept. 171, C. N. Galeener, J. H. Markey, G. V. Ricks.

Ten-year: Dept. 6-300, L. B. Shaw, Robert Young; Dept. 16-1, R. E. Smith, Kenneth Watkins; Dept. 25-5, R. H. Segrell; Dept. 34-1, G. H. Blain; Dept. 41-2, A. L. Newman; Dept. 42-5, Fanny C. Avitable, R. A. Gadow; Dept. 44-5, D. O. Jones; Dept. 91-0, Mary A. Branche.

GD/ELECTRONICS

Fifteen-year: Dept. 34-00, J. L. Burt.

Ten-year: Dept. 71-00, J. F. Pavlick (due Jan. 23); Dept. 72-00, Fred Keltner, Elinor R. Rush (due Jan. 28).

Retirements

CONVAIR

BARTHOLOMEW — C. George, Dept. 292-1. Seniority date Nov. 5, 1956, retirement effective Jan. 14, 1963.

FLETCHER — Virgil V., Dept. 180. Seniority date Feb. 27, 1951, retirement effective Sept. 11, 1962.

FRANKSTON — Hyman, Dept. 216. Seniority date Oct. 4, 1950, retirement effective Nov. 14, 1962.

GREGORY—Victor I., Dept. 115. Seniority date Nov. 12, 1945, retirement effective Jan. 18, 1963.

MARCHINO—Noble, Dept. 25-5. Seniority date Oct. 9, 1950, retirement effective Jan. 7, 1963.

Rider-Driver

CONVAIR

RIDE WANTED — 7:30 a.m. to 4:30 p.m., from Lemon Grove to Plant 1. Kenneth Potter, home phone 463-4584, or plant ext. 2710.

RIDE WANTED—3:30 p.m. to 12 p.m., from Greenfield Drive in El Cajon to Plant 1. George White, home phone 444-0358, or plant ext. 2247.

General Dynamics NEWS

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Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone BRowning 7-8900, ext. 3322. Staff: Bryan Weickersheimmer, editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320, P.O. Box 1950, San Diego 12, Calif. Telephone CYpress 6-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

GD/Electronics (San Diego) news contact: Betty Freeby, CY-8-4641, ext. 1377, Plant 1, Bldg. 51.

Fort Worth Editorial Offices, Col. 72, Admin. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and GD/Telecommunication, editorial offices, 100 Carlson Road, HUbbard 2-2200, ext. 2555, Gordon Morison, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.

$32,000 Ideas Win MacSave-it

Cost-cutting ideas saving GD/Convair nearly $32,000 won monthly MacSave-it awards for W. R. Holmes and R. V. Brunner at the January Management Club meeting.

Holmes, who directs standards laboratory activities as Dept. 48 assistant test group engineer, was presented the November MacSave-it for a Cost Improvement Proposal saving $28,800.

When it became necessary for GD/Convair to develop calibration procedures for calibrating test equipment, Holmes adapted procedures from other General Dynamics divisions, eliminating need of engineering and technical personnel to develop and write the procedures.

Brunner's CIP saved $3,046 by a new method of sequencing harness wires for soldering in electric bench. He developed and put into use a sequence plate so that workers no longer must search for the right wire during harness fabrication.

Brunner, now transferred to GD/Astro, was Dept. 216 assistant foreman at the time his CIP was accepted and chosen for the December MacSave-it trophy.

GD/FW Working On Tasks For NASA and OCD

General Dynamics/Fort Worth is fulfilling contracts totaling $178,500 for NASA's Manned Spacecraft Center at Houston and the Office of Civil Defense—the first work done by GD/FW for either of these organizations.

Under a $118,500 contract, nuclear instrumentation group is designing, developing and fabricating personal dosimeters to be used in NASA's Apollo Project.

Virtually completed for OCD is a $60,000 study for a system to survey the U. S. for radiation fallout following either a nuclear attack or an isolated nuclear incident.

Nuclear instrumentation group, along with operations research section of engineering, is working on the latter project.

Dosimeter prototypes to be used in the Apollo Project—calling for a lunar landing by man—are to be delivered starting May 11. Last deliveries are scheduled for June.

"We're to make three different types of dosimeters which will fit on the spaceman's helmet, chest and ankle," said Dr. K. R. Spearman, nuclear group engineer in charge of the operation.

These dosimeters will detect particulate radiation (protons, alpha particles, and cosmic rays) which penetrate the space ship in flight.

"Additionally," Dr. Spearman said, "they'll measure secondary radiation—such as high-energy X-rays—created by interaction of radioactive particles with the space vehicle."

Dr. Spearman pointed out that these dosimeters might also be used in Project Gemini, the two-man orbit slated for the near future.

This contract calls for delivery of five each of three different kinds of dosimeters, along with readout and display equipment.

Second contract called for designing sensors, and developing flight procedures and methods for transmitting radiation data to focal points.

This information would then be passed on to the various civil defense sites, and finally to Washington, to be used in national-level decisions.

JOURNAL PUBLISHES TECHNICAL PAPER

A technical paper by E. L. Fink of General Dynamics/Pomona's infrared and physics group (Dept. 6) will be published in the February issue of Bulletin of the American Physical Society. Fink's paper is entitled "Theory of super conductivity in transition metals."



SAVERS—W. R. Holmes (left) of Dept. 48 and R. V. Brunner, formerly of Dept. 216, receive November and December MacSave-it trophies for top CIPS from G. A. Covington, manager of quality control, at last Management Club meet.



MUG MAN—Ralph Montgomery of Dept. 41 and second vice president of Management Club (right) receives Mug of Month for club efforts from Miles Stepich, chief of manufacturing control, at January meet.

22 GD/Convair Students Finish First In-Plant Editing Course

Three years and 335 students after inception of technical writing classes under sponsorship of GD/Convair's educational services, a new vantage point was gained at close of the fall semester when 22 students successfully completed the first editing class.

The advanced class, offered through the cooperative in-plant and San Diego City College technical training program, ended Jan. 25. It had started last September with an enrollment of 32.

Those completing the fourth-level writing class were awarded certificates of recognition at educational services facility in Bldg. 19 on "graduation day" by instructor Louie Henderson, Dept. 15, with Wayne Turner, educational services coordinator, and C. J. Fisher, GD/Astro support publications general supervisor, on hand to present congratulations.

Henderson has been active in all phases of the writing classes since they were first included in GD/Convair's in-plant educational program, and has been instrumental in gaining accreditation for each level of technical writing.

Because of increasing demands for the expert "know-how" in technical communications, additional classes at levels above those now offered are planned by a special curriculum-planning committee appointed by San Diego City College, said H. W. Rubottom, in charge of GD/Convair educational services. The committee will make a special survey of the continuing needs for formal training in the field of technical communications.

Four levels of technical writing classes, from beginning through editing, now are offered General Dynamics people for the spring semester which opened Jan. 29. Registration still is open to the in-plant courses and employees interested in enrolling in any of the classes should contact Turner at educational services office, ext. 491, Plant 1.



FIRST GRADUATES—Louie Henderson (far left), instructor, hands out certificates to group completing first editing class sponsored by GD/Convair educational services. At far right is Wayne Turner, educational services coordinator. Next to him is C. J. Fisher, GD/Astro support publications general supervisor.

GD/Astro Designs Probes For In-Flight Launching To Study Missile Trails

Months of concentrated effort on a new General Dynamics/Astronautics program, Flight Launch Infrared Probe (FLIP), is culminating in actual production and test operations.

Development of these probes, first of their kind designed to study plumes of missiles during launch and in flight, is being conducted under a contract from Air Force Space Systems Division.

Current contract, covering research and development of the advanced space-age data collecting package, calls for six production units and three dummy test articles. Three of the production probes are due for delivery in March, the other three in June, with flight tests slated at the Atlantic Missile Range during spring and summer of this year.

Two successful dummy test firings were held at Camp Pendleton, Calif., just before the end of the year.

The FLIP, briefly, is a new concept in the gathering of information from rocket plumes, or gases ejected from missiles in flight. The probe units, containing highly-refined instrumentation, are inserted in launch tubes which are attached to the outside of the main missile booster. Probes are fired at different altitudes upon command from instrumentation within the units.

FLIP program director is Sam Ackerman, vice president and director of GD/Astro electronic programs, with Dave Fox, project engineer.

Palmer Smith's passenger pod group is responsible for the design of structure which will attach to the booster. Dept. 756, under direction of Bob Carman, has been fabricating and assembling the structure.

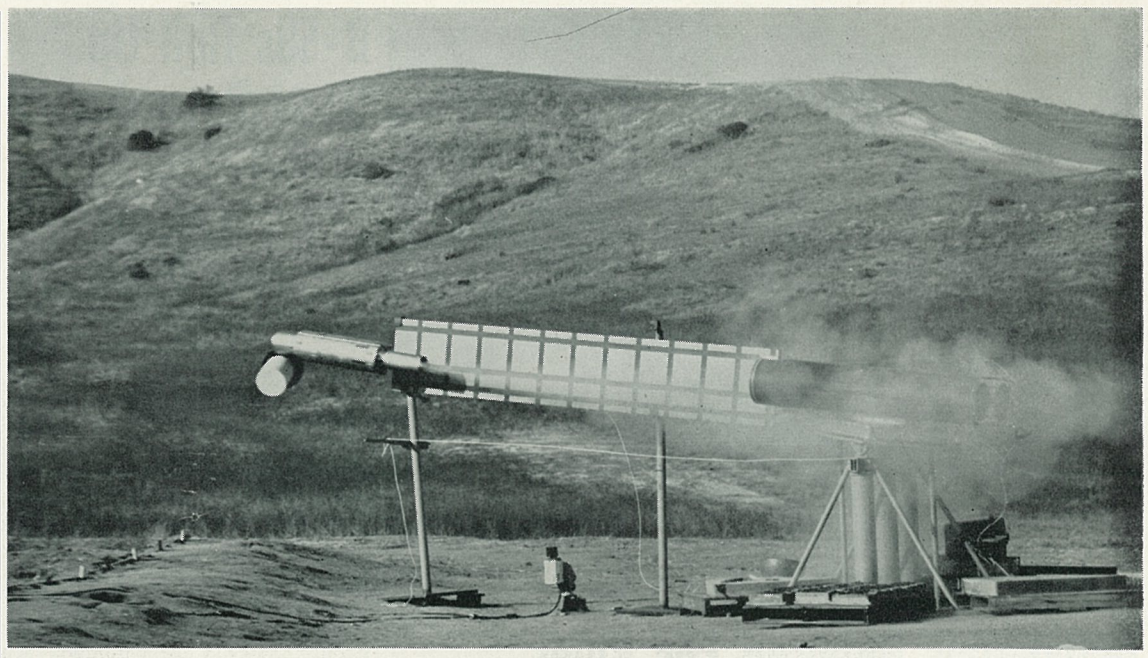
Dr. F. C. Harshbarger, senior staff scientist in Astro space science laboratory, is responsible for technical direction of the program with Mark Dorian acting as coordinator of contributions from the several Astronautics' groups and outside companies involved.

Other Astro groups contributing to the program, besides those mentioned, include the programming section which developed the programmer to direct the probe's mission; infrared/optics technology group of Astro applied research laboratory which designed and fabricated the three-channel radiometers (**General Dynamics NEWS**, Nov. 7, 1962).

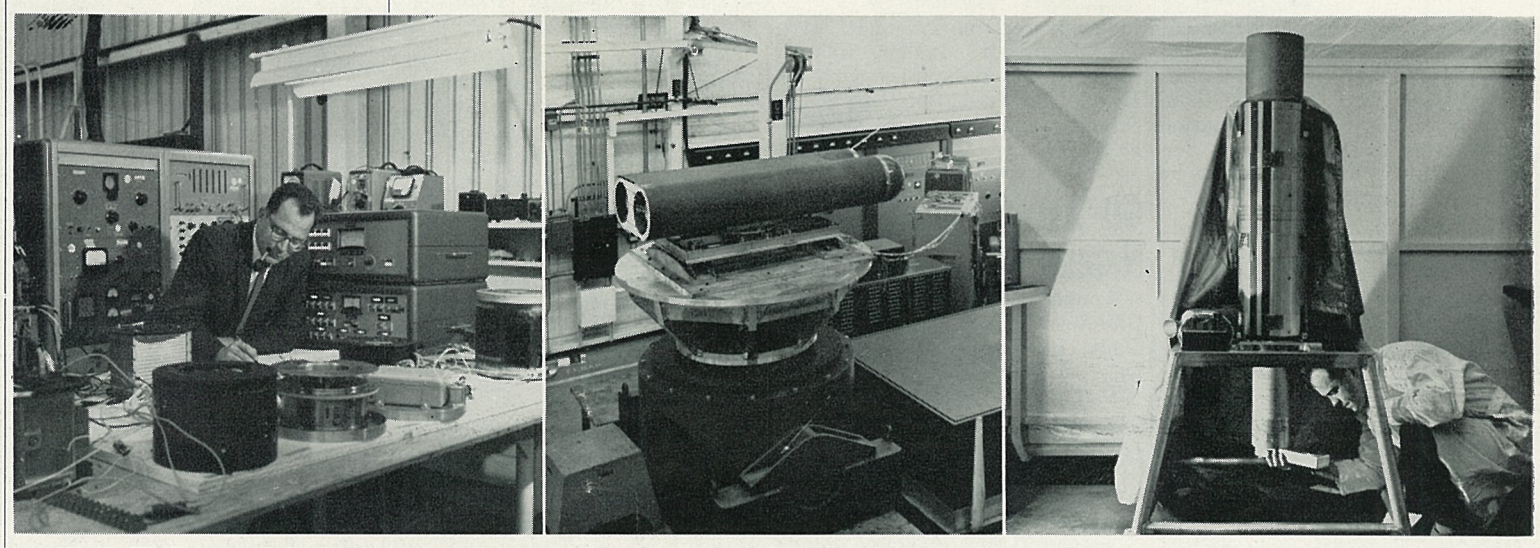
Other components, including telemetry package, antennas, battery package, one-channel radiometers, rapid-scan monochrometers, magnetic aspect sensing devices, are furnished by subcontractors.

Dynamics test lab engineers of Dept. 568-1, with support of Dept. 756 technicians and mechanics, now are assembling the various components in a laboratory area in Bldg. 72 at Plant 1.

This assembly and test area covers 4,000 square feet along the north side of the Plant 1 laboratory building. Adjoining is a 20x30-ft. optics calibration clean room where optical calibration will be accomplished in a dry nitrogen chamber under full spin. Serving as test engineer during integration and testing is B. L. Beck.



PROBE LAUNCH—Probe leaves launcher during test firing at Camp Pendleton, near San Diego. It was spinning at 600 rpm at time of photo. Grid measures straight line of launch. White object at probe's tip is launcher's detachable cap, jettisoned at moment of firing.



PLUME STUDY—At left, Mark Dorian, FLIP project coordinator, is surrounded by instrumentation and components of newly-developed probes, designed to study missile plumes. At right, J. H. Keller, GD/Astro Dept. 568-3 test engineer, aligns rocket motors on jig holding one of first test probes. In center is launcher structure undergoing vibration testing at GD/Astro's Kearny Mesa engineering test lab. Many departments have contributed to development of the probes.

Scientist Is Speaker On Meteoric Impact

Dr. R. F. Rolsten, a General Dynamics/Astronautics staff scientist, was guest speaker at the Jan. 21 meeting of the Los Angeles Chapter, Society of Aerospace Material and Process Engineers.

The Inglewood meeting topic for Dr. Rolsten was "Behavior of Materials When Subjected to Hypervelocity Meteoric Impact."

GD/Convair Builds Massive Launcher For NASA's Little Joe II Vehicle

Sections of the first massive launcher for the Little Joe II launch vehicle, being built at General Dynamics/Convair under a National Aeronautics and Space Administration contract, are awaiting assembly in experimental.

One of the largest structures ever designed and built at GD/Convair, the launcher, with steel beams 30 inches deep, will have a total weight of nearly 100,000 pounds—three times that of an F-106! Heaviest subassembly weighs 30,000 pounds.

Details and subassemblies of the launcher have been built in Dept. 401, tool manufacturing, in Bldg. 4 at Plant 1. The subassemblies of the first structure now are going to experimental in Bldg. 5, where they are painted, positioned, and assembled. The launcher will be fitted with electrical circuitry and assembled in experimental yard where it will be mounted on short circular rails, loaded with weight, and proof tested.

"Launchers for the Little Joe II booster required down-to-earth design to keep them low in cost, simple, efficient, reliable, and easy to use," said J. B. Hurt, Little Joe II program manager.

"They must be heavy enough to support a solid propellant-type booster and payload that could weigh as much as 270,000 pounds, and withstand pressures and temperatures as high as 225 pounds per square inch and 5,000 degrees F. from motor thrust as high as 800,000 lbs."

The huge launcher is designed to swivel through a 140-degree arc, swinging the booster away from the tower and aiming it down range accurately and under control within seconds of firing time to account for shift in winds. The launcher can be aimed at elevations between 75 degrees and vertical position.

Base of Little Joe II will be 14 feet off the ground when positioned on the giant launcher. The booster will rest "lightly" on six points supported by 8-inch tubes. In addition, the vehicle is supported near the top of the booster by retractable arms which release as the motors fire.

The launcher has been built to stand up for two years of hard usage, or through 20 launchings, with minimum refurbishing between firing, and is so constructed that damaged parts may be individually replaced. Its bulk has made it necessary to build it in sections so that it can be transported to launch sites where it will be assembled.

"The launcher is designed so that it can be easily adapted to a number of launching sites—even those that are 'primitive' compared to well-established sites," continued Hurt.

First firing tests for the Little Joe II vehicle and launcher are set for mid-year at the White Sands Missile Range.

'MANAGE' PUBLISHES POMONAN'S ARTICLE

William L. Piel of GD/Pomona is author of an article "(F/A) Plus (C/T) Equal S" published in the January issue of Manage, the National Management Association magazine.

The formula, Piel explained, is "facts" reduced by "analysis" plus "conclusions" reduced by "tests" equals "solutions."

Al Glaser Appointed To National Panel

Al Glaser, associate counsel in GD/Fort Worth's legal department, has been appointed to the national panel of arbitrators of the American Arbitration Association.

The non-profit association is devoted wholly to advancement of the knowledge and use of voluntary arbitration.

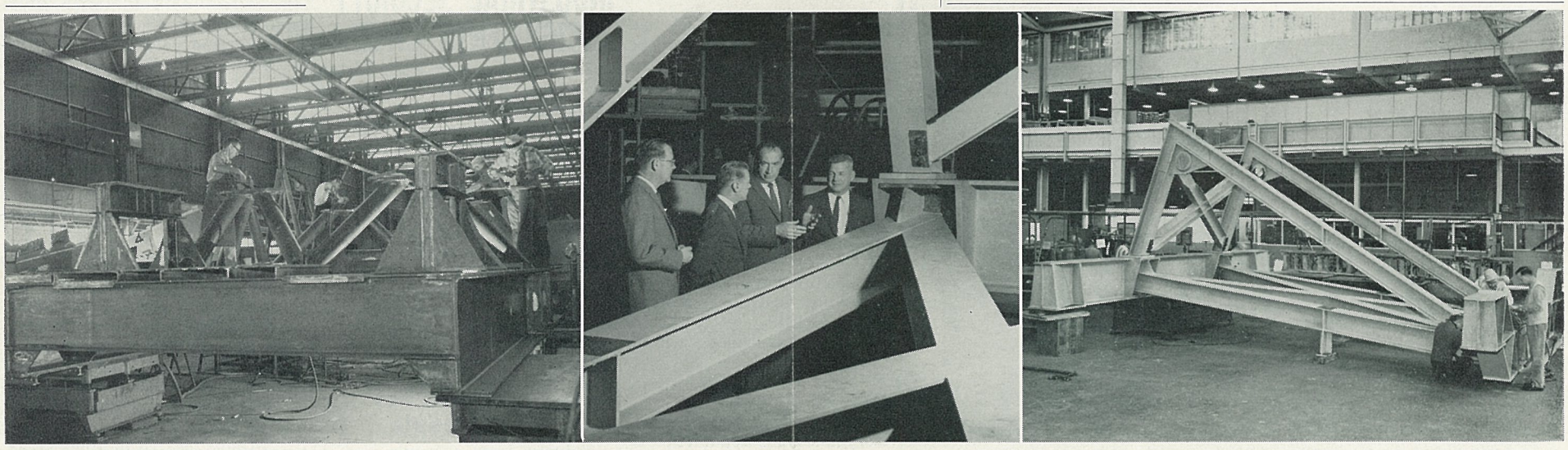
The panel functions in 1,600 American cities, and includes some 13,000 men and women specialists.

Minn. U. Establishes Nestingen Memorial

Gifts totaling $1,453.50 were accepted last month by the University of Minnesota, establishing the Irvin M. Nestingen Memorial Loan Fund, in memory of the late General Dynamics executive.

Mr. Nestingen lost his life March 1, 1962, in the crash of an airliner in New York. Friends and associates created the fund to aid engineering students at the University in his memory.

The University Board of Regents last month expressed appreciation for the donations.



GIANT TAKES SHAPE—At left, P. F. Heberer, C. G. Jones, Whitey Liegler, G. S. Fletcher, all GD/Convair Dept. 401 weld supports on first Little Joe II launcher bed in tool manufacturing before it goes to experimental for assembly. Center shot shows O. W. Sweetland, tool manufacturing superintendent; Vince Cernuto, assistant to manager of manufacturing; N. R. Keough, experimental superintendent; H. W. Meyers, tool manufacturing foreman, framed by huge steel beams of launcher base. At right, Wally Toomire (kneeling), Guy Roberts, Harry Alexander, of Dept. 131, tighten bolts on structure in experimental.



WITH THANKS—President J. R. Dempsey, in capacity as board chairman for Greater San Diego Science Fair, is surrounded by GD/Astro scientists and administrative employees to whom he presented certificates of appreciation.

Individuals Honored For Roles In San Diego Science Fair

Twenty-one General Dynamics/Astronautics employees were honored recently by President J. R. Dempsey who presented them with certificates of appreciation for service to the Greater San Diego Science Fair, for which he is board chairman.

This year's Fair will be held during early April in the Federal Bldg., Balboa Park. As before, it represents top science exhibits prepared by students and selected from local fairs held at San Diego area schools. Over 300 exhibits will be displayed.

This year, GD/Astro's Jack Croft, chief of educational services, will serve as chairman of the Fair judging committee, a post held in 1962 by Emory Thurston. Thurston will assist.

Receiving certificates from Dempsey for service in staff capacities were Ross A. Evans, Harold Sicard, Laura A. McGraw, Sidney Albert, Croft and Thurston.

Honored for participation as judges were Drs. Harold D. Adelson, David H. Garber, Samuel Kaye, J. M. Maughmer, Orlo E. Myers, R. Fred Rolsten, W. J. Schart, J. B. Sutton Jr., and W. L. S. Wu.

GD/Astro Daughter Named Turf Queen

Donna Larson, 17, daughter of GD/Astro's Mrs. Perne Larson, Dept. 101-7, and D. C. Larson, Dept. 571-2, at Cape Canaveral, will reign as queen of the Valentine Ball at Del Mar Turf Club, Feb. 9.

The San Dieguito high school senior will be crowned Miss Sweetheart of 1963.

Among other honors, Donna was chosen earlier as Miss World Poinsettia by the Leucadia-Encinitas Flower Growers' Assn., and was Homecoming Queen at her school last year. She has been elected activities manager at the school this semester.

First of Updated B-58 Hustlers Has Assumed SAC Combat Role

An even more lethal and versatile Hustler No. 31 resumed its combat role with the 43rd Bomb Wing Jan. 18, following modification at General Dynamics/Fort Worth.

Capts. K. W. Yon, pilot, and D. D. Clark, navigator, and 1st Lt. W. G. Nycum, DSO, made the functional 2-hour, 35-minute check flight to the Carswell AFB site two days ahead of schedule.

No. 31 is one of about 59 SAC Hustlers slated for the conversion program, which is well under way at GD/Fort Worth.

Major changes include addition of multi-weapon capability; escape capsules (to protect crewmen during supersonic ejection); voice-warning system (which gives the pilot a vocal as well as visual indication of a malfunction); and a number of other technical order changes.

Under direction of E. E. Finch, modernization and development manager, reporting to Vice President B. G. Reed, the program calls for 43rd Wing bombers and part of the 305th complement to be modified at Forth Worth.

Other production planes in the program are being modified at San Antonio Air Materiel Area.

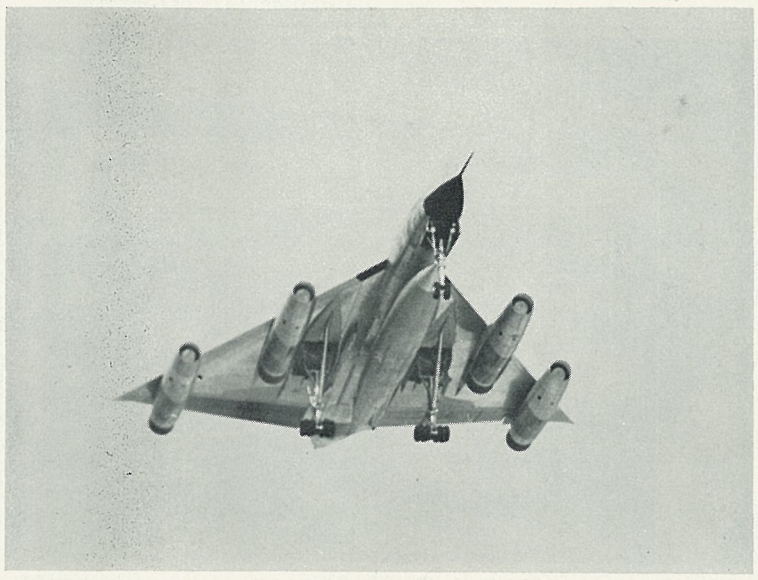
The program is currently operating on schedule. Roughly, a new combat Hustler is brought into the program every third day, while a modified B-58 is scheduled for flyaway on about the same schedule.

Modification work will be broken down into two stages, according to Finch.

"Most major modifications will be made during the first stage," he said. "Time required will vary with each plane, with the longest period not expected to exceed 52 days.

"Stage two will involve installation of kits not available during the first stage. This cycle will be about 15 days for each plane."

Work is being done in the 200-foot bay area, from about Col. 114 to the north end of the plant.



OFF AGAIN—B-58 No. 31 roars off on functional check flight following completion of modification program at GD/Fort Worth. Updating gives SAC's Mach 2 bomber added destructive power and versatility.

B-58s Roll Up Good Record In Reliability

SAC B-58s are reaching new heights of reliability.

Last month, a combat Hustler from 43rd Bomb Wing at Carswell AFB rolled to a new record of 31 consecutive on-time takeoffs.

(Not included in the record were four temporary duty sorties—all of which were also made on time.)

This meant that for nearly a year, the record-breaking B-58 made its takeoffs within either 5 or 15 minutes of scheduled takeoff time.

(On Jan. 1 of this year the ground rules were changed. An on-time takeoff is now considered one made within five minutes of schedules which are determined one week in advance. Previously it was 15 minutes.)

"This record reflects the improving maintenance performance of the B-58 and attests to the reliability that can be achieved with the plane," a spokesman said.

The spokesman added that despite the more rigid time requirements on on-time takeoffs, Air Force crews are already "going after" new records in this area.

"The record of plane No. 59-2454 reflects on all the 43rd Bomb Wing, including the operational flight crews and field maintenance shops," the spokesman said.

Special commendation will be given to the plane's crew of S/Sgt. Howard R. Gay, crew chief; A1C Allen Forbes, A2C Anthony La Paloyerie, A1C Jan C. Boyd, and A3C Ted Rogers.

McMaster to Chair Technical Session At QC Conference

A. C. McMaster, director of quality control at General Dynamics/Pomona, will be chairman of one of the technical sessions during the 1963 Western Region Quality Control Conference of the American Society for Quality Control at Las Vegas, Nev., Feb. 21-22.

T. V. Wheatley (Dept. 6) will present a paper, "Missile Performance Capability Assurance," at the conference.

Keynote chairman of the conference is J. F. Gill of the Aerojet General Corporation who was formerly quality control officer for BUWEPSREP at Pomona.

Keynote address will be delivered by Dr. William R. Pabst Jr., chief statistician, Bureau of Naval Weapons. Dr. Pabst has shown a continuing interest in reliability methods and results in the Terrier/Tartar programs.

CALIBRATION IDEA EARNS $234 AWARD

An idea for improving the calibration of vacuum tube voltmeters and oscilloscopes at General Dynamics/Pomona has earned a $234 award for D. E. Shaw (Dept. 72).

Nine different pieces of test equipment were being used in the calibration work. Shaw suggested that a new voltmeter calibration system be purchased to simplify the task.

An investigation was made of the Employee Suggestion which determined that purchase of two new calibration systems as suggested by Shaw would result in estimated savings of $2,342 above cost of the new systems.

Shaw will receive one-half of his award now and the remainder after six months, when anticipated savings have been verified.

SORENSON TO CHECK ON ENGINE REPORTS

N. K. Sorenson, contracts supervisor, has been appointed "B-58 engine manager" by President Frank W. Davis. Sorenson's duties are to insure proper GD/Fort Worth status reporting required by the contractor.

Recreation Council To Convene at Astro

Astronautics Recreation Association Clubhouse will be a key location during the 13th Annual National Industrial Recreation Association Western Region Conference coming up Feb. 15-17.

The clubhouse will be center of all meetings and business sessions as well as exhibit headquarters for the conference. The Sands Hotel is official conference headquarters.

Dick Mitchell, GD/Astro's employee services chief and a N.I.R.A. director, is conference chairman.

Committee members include GD/Convair's Pete Beyrer; GD/Pomona's Herb Naish; and GD/Astro's Ray Mendoza, Don Glasser, Ezra Johnson, Marty Stutz, Bill Dawsey and Bryan Weickersheimmer; plus other local recreation leaders.

Expected to attend are some 150 professional and volunteer recreational leaders from seven states on the West Coast. They will take part in four major business sections, plus meal-time meetings. Recreation leaders will serve as panelists at each session, while Harold Keen, Al Couppee, Lute Mason and Fred Lewis will act as moderators.

Speakers include Biff Gardner, Miss Eden Ryl, Ted Banks, Don Neer and Ed Mitchell. The last two are executive secretary and president of N.I.R.A., respectively.

Members of many ARA activities will stage special demonstrations on Saturday afternoon. All ARA Recreation Area facilities, including the Clubhouse, will be closed to all but conference delegates Saturday (Feb. 16) and Sunday.

★ ★ ★

VANDENBERG AFB — Teams representing ARA here in three sports will enter telephonic tournaments planned in conjunction with the Western Region National Industrial Recreation Association Conference Feb. 15-17.

Results of events played locally will be telephoned to the conference in San Diego where they will be compared with results of similar competitions held throughout the Western U. S.

Heading ARA teams here will be Leo Bernitz (trap shooting), Don Wilson (bowling) and Jim Batson (golf).

Plans also call for ARA officers from Vandenberg AFB to attend the San Diego conference. Delegates include Ross Workman, employee services representative; Gene Sims, ARA president; Ernie Millar, vice president; Arlene Barnell, secretary; and Auggie Daddi, treasurer.

Barinka Appointed To Post at GD/Astro

Appointment of S. J. Barinka as general foreman at General Dynamics/Astronautics was announced last month by E. D. Bryant, vice president—operations.

Barinka will report to J. P. Hopman, factory manager, for special assignment.

Veteran of more than 20 years' service in GD/Convair field operations, Barinka joined that division in 1940 as superintendent of B-24 field operations.

He was subsequently superintendent of B-36 field operations at GD/Fort Worth during 1951, and upon return to GD/Convair served as superintendent of jet transport field operations during the Convair 880 program.

INDUSTRIAL SECURITY ASSIGNMENTS CITED

Two key security assignments have been made at General Dynamics/Astronautics by W. E. Bowman, manager of industrial security, industrial relations department.

George W. Wilson, formerly Astro security officer at Walker AFB, has been named security officer with responsibility for the visitor's office.

Fire Chief A. C. Anderson will head Astro's Civil Defense and Disaster Control organization in addition to his other duties.

Astro, Convair Set Salvage Schedule

Salvage yard schedule at GD/Convair and GD/Astro for next four Saturdays is:

GD/Astro—Feb. 9, 23.

GD/Convair—Feb. 16, March 2.

Repeat Hockey Trip in Offing

Although plans were altered at the last minute, ice skaters from Astronautics and Convair report such an outstanding visit to witness ice hockey that a repeat trip is planned for Feb. 23.

Lack of response to a Jan. 26 trip caused those interested to give up a chartered bus in favor of private cars. However, a 10-minute overtime and a 6-6 tie between the Los Angeles Blades and San Francisco Seals made the trip worthwhile. Too, participants were part of a record crowd of 13,942 watching the contest.

Plans for the next trip call for chartered buses to depart Astro parking lots at 3:30 p.m. (Saturday), stop for an hour to dine at Knott's Berry Farm, then proceed to the game. Return arrival will be about 1 a.m.

Cost per person for round-trip and a $3.50 reserved ticket at the arena will be $7.

However, reservations must be made through employee services by Friday, Feb. 15.

SECOND SKATE TRIP PLANNED IN MARCH

Response to a joint ARA-CRA ice skaters' Winter Weekend at Big Bear Lake this weekend (Feb. 8-10) was so great a repeat is planned for those who were turned away this month.

Another visit will be made March 8, 9, 10.

Cost per person will remain $11 and include two night's lodgings at Wawona Lodge and three meals. Lodge rooms of varying sizes are available, plus housekeeping units for families.

Some 50 stand-by reservations have been accepted for the February trek and about 100 persons turned away. Ice skaters hope those who can not make the February trip will be on hand in March. Reservations for the latter are being accepted now at employee services outlets.

Registration Open For Spanish Class

Beginning and intermediate Spanish courses, taught by Jim Hardison, GD/Convair Dept. 15, at Hoover Adult High this semester, will be open for registration through Feb. 20.

Any General Dynamics person wishing to enter either course may enroll at class meetings at the school, 4474 El Cajon Blvd., said Hardison.

Beginning course is held Wednesdays, 6:30-9:30 p.m. in Room 206. Intermediate classes are Mondays, 6:30-9:30 p.m., Room 219.

For further information call Hardison evenings at his home, phone 276-5805.

Astro Folk at Plant 1 Served by NEWS Boxes

GD/Astro people located at Plant 1 may pick up copies of Astronautics edition of General Dynamics NEWS from boxes located by the time clock on third floor of Bldg. 51 and at Col. E-8 on mezzanine of Bldg. 4.

Groups located in other areas within Plant 1, who are not receiving Astro editions, are urged to call the NEWS office, ext. 1071, Plant 1.

Sports & Recreation

Convair Son Wins First With World War I Model

Outstanding flight performance and careful scale detail of John Oliviera's entry gave him top spot in CRA Aeromodelers' annual rubber-powered scale model contest.

Oliviera, whose father is in GD/Convair Dept. 143, placed first in the senior division with his SE5A World War I bi-plane at the Jan. 19 event which attracted a large number of contestants and spectators to the Clairemont Mesa Flying Site.

"The weather was near perfect for model flying," said Larry Peterson, club president. "Judges Nat Antonioli and Phil Akins, both Dept. 6, were kept busy for almost three hours by eager contestants lined up to test their skills."

Second place in the senior division went to Jack Jensen (Dept. 6) for performance of his Piper Cub. Third was a Bristol Bullet flown by Haruto Shimazu.

The fast climb of Fudo Takagi's Taylor Craft created a sensation, according to Peterson, but the lack of scale detail placed him down the list. Takagi is with GD/Electronics division.

Others competing in the senior division were Curt Tanner, Phil Kessel, CRA Commissioner Don Larsen, and Peterson, all Dept. 6.

Winners in the junior division were: First, Kyle Jensen, son of Jack Jensen; second, Susan Tanner, daughter of Curt Tanner; and third, Robert Bowden, son of Dean Bowden, also Dept. 6.

CRA Aeromodelers now are deep in preparing their entries for the next major club activity, the annual scale meet for all types of free flight flying scale models set for April 7.

For information contact Peterson, ext. 1477, or Larsen, ext. 2289, both Plant 1.

RADIO OPEN HOUSE DRAWS 50 GUESTS

About 50 persons turned out to view facilities of GD/Convair's Radio Club (K6DBS) at the club station on Harbor Drive during the open house weekend, Jan. 26-27.

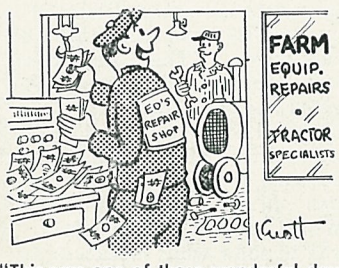
CRA Commissioner Jim Lack said that most of the visitors were General Dynamics people during the Saturday and Sunday demonstration hours. However, a number not connected with the company dropped in to inspect the club's equipment. Among these was Hideo Matsushita, flight engineer for Japan Air Lines in San Diego during JAL crew training. Matsushita, a "ham" in his own right, is identified by the call letters JA1NI and may be located on 20 c.w. when he returns to Tokyo.

Club members operating the rigs during the open house were Lack (WA6CYD), John Crenshaw (WA6MRC), L. D. Rush (K6QXN), Bill Rutherford (WA6QNQ), Frank Schneider, and George Spanovich (WA6ZRX).

First Free Swimming Offered This Month

First free swim night of the season for GD/Convair and GD/Electronics families will be Saturday (Feb. 16) at Mission Beach Plunge, 7 to 9 p.m.

Since a limited supply of tickets has been made available through IRC, sponsor of the monthly swim nights, they must be asked for individually at employee services, Bldg. 32, Plant 1. Lois Woline or Evelyne Thrall in CRA office will issue them upon request.



"This was one of those wonderful days when everything went wrong with everybody's tractor."

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions each Saturday, 7 a.m. to 1 p.m., Clairemont Mesa flying site.

ARCHERY — Monthly shoot Sunday (Feb. 10), Balboa Park range. Western Regional IRC tourney Feb. 16, 10 a.m., Morley Field range.

BASKETBALL — Shop league tourney play Tuesday nights, Muni Gym, Balboa Park.

BRIDGE CLUB — Weekly sessions held each Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics players welcome.

CAMERA CLUB—Joint ARA-CRA meeting Feb. 17, 7:30 p.m., Photo Arts Bldg., Balboa Park.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Meeting tonight (Feb. 6), Floral Association Bldg., Balboa Park.

GOLF—CRA tourney at Bonita Country Club, Feb. 9-10.

ICE SKATING—Weekend outing to Big Bear Lake, Feb. 8-10.

JUDO—Instruction and workouts for beginners and intermediates Thursdays, 7:30 p.m., CRA Clubhouse, Pacific Hwy.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75 cents; children under 12, 20 cents.

PISTOL CLUB — Next regular shoot Feb. 10, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Feb. 7), 8 p.m., club headquarters on Harbor Drive.

RIDING CLUB — All-day outing and trail ride Feb. 17 from Tierra Ranch. Regular meeting Feb. 7, 7:30 p.m., Gillespie Field Clubhouse.

ROAD RUNNERS — Weekend outing to Split Mountain, Feb. 8-10.

ROCKHOUNDS—All-day trip to Tick Canyon Sunday (Feb. 10). Meeting Feb. 14, 7:30 p.m., Gillespie Field Clubhouse.

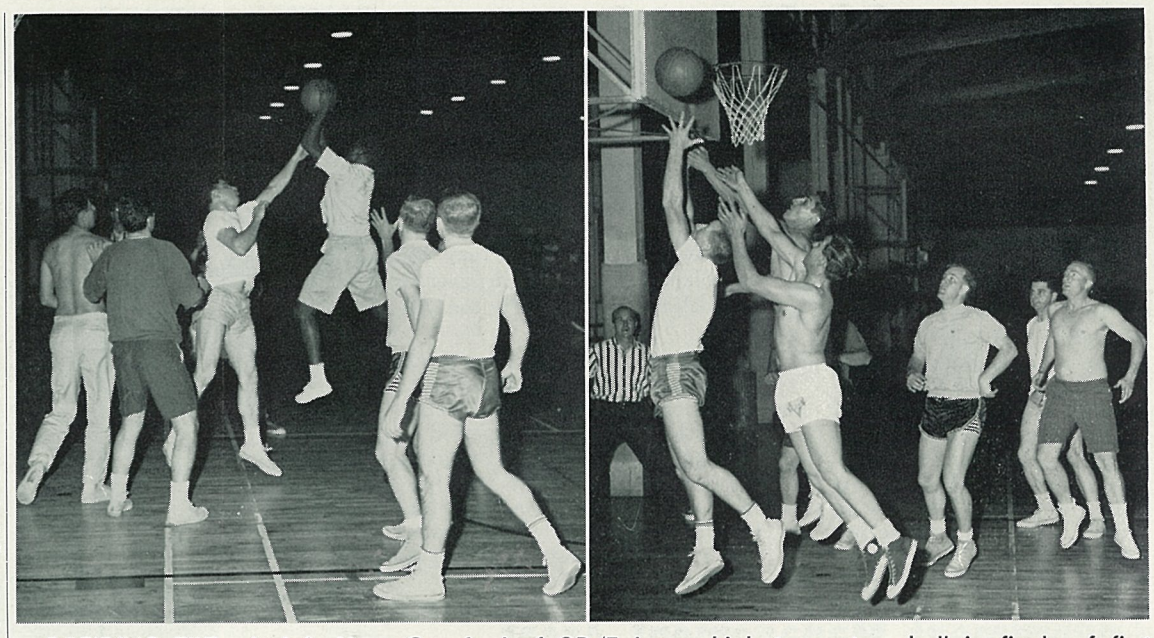
ROLLER SKATING — Free skate night Feb. 18 at Skateland, Front & G Sts., 6:30-9:30. Tickets at employee services, Bldg. 32.

SNOW SKI CLUB — Regular meeting Feb. 19, Convair executive dining room.

SWIM NIGHT—Family swim night Feb. 16, 7-9 p.m.. Mission Beach Plunge. Free tickets at employee services, Bldg. 32, Plant 1.

TROPICAL FISH CLUB — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny. ext. 1657, or Jack Loos, ext. 2456, both Plant 1.



DECIDING TILT—At left, Huey Crawford of GD/E jumps high to capture ball in finals of first round of GD/Convair shop basketball tourney. At right, Dick Fenton (GD/E), Ray Perez and Al Jackson (Rose Canyon) scramble for rebound. Rose Canyon dashed first-half championship hopes of undefeated GD/Electronics by taking tight game, 32-29. GD/E and Electronics finished first half in tie.

Top Bowmen Shoot Feb. 16

CRA's top bowmen will compete in a telegraphic tournament Feb. 16 during the three-day Western Regional Conference of Industrial Recreation Councils.

Commissioner Al Phipps (Dept. 401) will captain the five-man team chosen on their individual performance during the last three months. Other team members are Harry Ross (Dept. 400), Bob Lorch (Dept. 401), Bud Bence (Dept. 140) and his son, James, of GD/Electronics.

Tournament shooting will begin at 10 a.m. at Morley Field range on the Saturday date. All will take part in a classification round, shooting four arrows at each of 10 targets from distances of 30 to 120 feet. Second round will be a handicap shoot at the same number of targets.

Team score will be calculated on the basis of handicaps established in the first round.

Regular CRA Archery Club monthly shoot will be next Sunday (Feb. 10) at Balboa Park range.

Rockhounds to Visit Antelope Valley For Howlite Search

First trip of the year for CRA Rockhounds will be this coming Sunday (Feb. 10) when they travel into the Antelope Valley area on a search for howlite specimens.

Commissioner Dan Whorton said that members will meet at Tick Canyon, near Palmdale, for the one-day outing. Everyone is reminded to bring digging tools, water, and picnic lunch.

Ed Wawrzynski, field trip chairman, will see that CRA signs and markers are placed at the turn off from Highway 6 to the howlite dumps near the borax quarry. Maps giving directions to the site are being mailed to members. Anyone who has not received one may pick one up at CRA office, Bldg. 32, Plant 1, or can contact Whorton at his home phone, 262-7047.

Regular Rockhound meeting will be held next Thursday (Feb. 14), 7:30 p.m., at Gillespie Field Clubhouse.

CRA Lensmen Join Astro For Meeting

Camera fans at GD/Convair and GD/Electronics will join Astro Lens at the Feb. 17 meeting in Photo Arts Bldg., Balboa Park, 7:30 p.m.

Black and white and color transparency entries will be judged in the first quarterly contest of the year. An old 16mm movie, taken in 1927 of the return of Charles Lindbergh to San Diego following his flight across the Atlantic, will be shown for members' entertainment.

CRA Pistol Club Match Decided By Bull's-Eyes

Bull's-eyes decided first and second standings in CRA Pistol Club's Short National match Jan. 27 with Joe Williamson and Jim Halfacre tied at 279.

Williamson's six Xs gave him top spot over Halfacre's five. Williamson is in Dept. 401; Halfacre, Dept. 140.

Third-place winner was Vern Mardis (Dept. 34), just one point behind with 278. CRA Commissioner Ash Bishop (Dept. 451) was fourth with 271; W. G. Walker (Dept. 6), fifth, 266.

In .22-cal. Police Course competition Mardis won the master class with 290, followed by Williamson with 287, and Halfacre, 286.

Ralph Picard of GD/Electronics Dept. 71 won the expert class with 275. Second was Bishop's son, Ash III, with a 258.

Next Pistol Club event will be Feb. 10 at the San Diego Police Pistol Course.

ALL-DAY OUTING SET FOR CRA RIDING CLUB

An all-day outing and trail ride will take CRA Riding Club members and their ladies to Tierra Ranch, at the intersection of Hwy. 67 and Poway Road, on Sunday (Feb. 17).

Fred Kershaw is in charge of the event which will honor old-timers of the club.

Route of the trail ride, which starts at 10 a.m., will be through Tierra Ranch, around Iron Mountain, and back to the ranch where the ladies will serve refreshments.

Rent horses are available at the ranch and may be reserved by calling Kershaw, Plant 2, ext. 661, second shift; Tommy Thomason, Plant 1, ext. 1047; or the club secretary, Mrs. Betty Sims, at her home phone, 582-8096.

Regular meeting of the club will be tomorrow evening (Feb. 7) at Gillespie Field Clubhouse.

GD/E Wives Club Sets Monthly Luncheon

Next monthly luncheon of the GD/Electronics Wives' Club will be a Valentine Day event, with the regular second Thursday date falling on Feb. 14.

Wives of all GD/Electronics Plant 1 and Plant 2 men are invited to join in the affair at Valley Ho Restaurant in the Mission Valley Center. Social hour starts at 11:30 a.m. Luncheon follows at noon with a 12:30 p.m. fashion show highlighting the program.

A door prize will be given some lucky lady, through courtesy of CRA.

Reservations are to be made by Feb. 12 through Evelyn Flournoy, phone 273-9504.

GD/E, GD/Convair Face Play-off

GD/Electronics and GD/Convair's Electronics team will be playing off for first-round honors in CRA's plant basketball tourney after GD/E was dumped in its final tilt by Rose Canyon, 32-29.

Both teams wound up the first half of the season with a six-won, one-loss record.

Play-off game will be set the first week in March, at close of second round play, to decide which will play the second-half winner for plant champion.

In Jan. 29 games, opening second half of the tourney, GD/E lost its game to Thirty-Niners, 27-22, and Electronics went down before Rose Canyon's onslaught, 27-17. Hi-Lows drew a bye with Dept. 91 dropping out of the league.

Next Tuesday (Feb. 12) Thirty-Niners meet Rose Canyon at 7:55 p.m., and Hi-Lows play Electronics in the 9 o'clock spot. GD/E has a bye.

Tourney games will continue on Tuesday nights throughout this month at Balboa Park's Muni Gym with spectators welcome, free of charge.

Road Runners Plan Travel to Split Mt.

Split Mountain in the Anza-Borrego Desert State Park will be the destination of CRA Road Runners this weekend, Feb. 8-10.

The trailerites will explore Fish Creek, Mud Hills, Sandstone Canyon, and other spectacular areas nearby, according to George Hurley Jr., club president, and wagonmaster for the trip. Lee Kunkle will act as assistant.

Plans are being made to rendezvous with the Douglas Jetliners Trailer Club of Long Beach at O'Neil Park some time during March.

Latest members to join the GD/Convair trailer group are Mr. and Mrs. Chuck Risner.

Bowling Tournament Slated During April

Dates of the annual CRA plant championship bowling tournament have been set for the weekends, April 20-21, and 27-28, announced Commissioner Jim Hayman. Place will be Pacific Recreation bowling alleys.

GD/Convair and GD/Electronics bowlers may sign for doubles or singles, women's and men's; and mixed team events. Prizes will go to high-scoring women, men, mixed teams in all events.

Entry blanks will be available after Feb. 12 at all alleys where CRA leagues are in progress—Pacific Rec, Victory Lanes, Frontier Lanes, University Lanes, Mission Valley Bowlero, Clairemont Bowl, and Tower Bowl. They also will be at CRA office, Bldg. 32, Plant. 1.

Workhorse of B-58 Test Program Grooms Pilots to Fly Valkyrie

B-58 No. 7, one of the real workhorses during the extensive Hustler flight-test program, is now being used to groom pilots for flights in the Mach 3 B-70 Valkyrie.

The plane was recently assigned to Edwards AFB Flight Test Center, where the Air Force is using it to conduct training programs for XB-70 flights.

Al White, chief test pilot for North American Aviation's Los Angeles Division, recently flew No. 7 as part of his training program for the Valkyrie's first flight, scheduled for the near future.

White was quoted as saying the Hustler provides an excellent training platform for future pilots of the XB-70 in that it acquaints them with some of the handling characteristics they will experience later and in greater proportion when they fly the Valkyrie.

Before being turned over to Air Force at Edwards AFB, No. 7 was stripped of the heavy instrumentation used over a period of months in the air loads program.

Prior to that, No. 7 was used in a number of other important test programs, including sudden engine failure tests and engine performance demonstrations.

Government Management Areas Redefined For Cape Canaveral

Government agencies' management responsibilities in Cape Canaveral area operations have been redefined in a new agreement announced recently by Department of Defense (DOD) and National Aeronautics and Space Administration (NASA).

The agreement states that DOD will continue as single manager of Atlantic Missile Range (AMR) which extends from the Cape to the Indian Ocean, while Air Force continues (under DOD authority) as host agency in existing Cape Canaveral launch area.

The new 87,000-acre Merritt Island launch area north and east of Cape Canaveral, however, will be under management of NASA's Launch Operations Center, which will also act as host agency.

Merritt Island is being developed to handle very large launch vehicles such as the Advanced Saturn. The facility will include 52-story Vertical Assembly Building, plus a 40-building industrial support area.

Most specific mission functions both at Cape Canaveral and at Merritt Island will be performed by DOD and NASA in their own behalf, regardless of location. DOD will retain responsibility for certain fundamental range functions in both areas.

NASA's Launch Operations Center is headed by Dr. Kurt Debus, while Maj. Gen. Leighton I. Davis, USAF, commands Air Force Missile Test Center (AFMTC) which operates AMR.

New Compact Radar Includes Contour Flying and Mapping

A new compact radar, combining aircraft terrain following, contour flying, mapping and navigation capabilities, has been developed by General Dynamics/Electronics at San Diego.

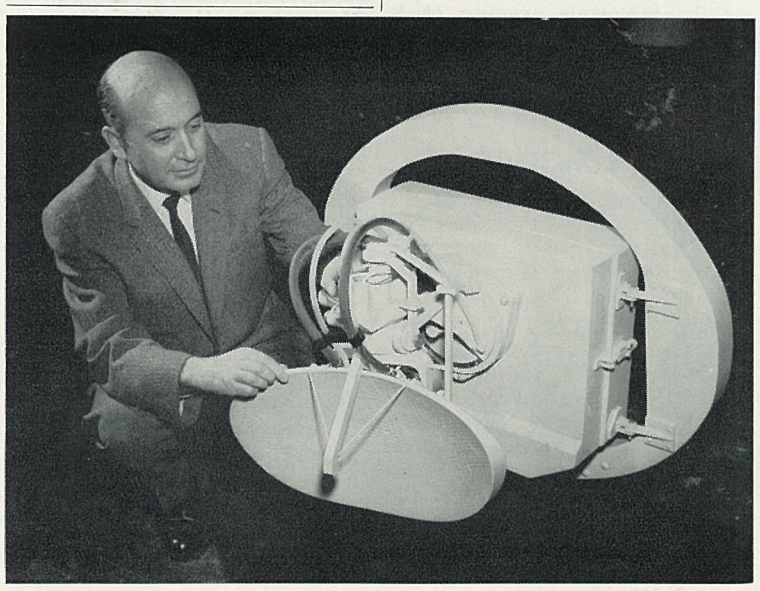
The second-generation radar design, based on existing GD/Electronics systems now operational in supersonic military aircraft, weighs less than 140 pounds. It can be adapted for use in a variety of aircraft, from slow observation planes to newest high performance jets, because of its wide range of antenna stabilization, light weight, low-power consumption, and compact design, say GD/Electronics engineers.

The system's terrain following and contour flying capabilities at low levels are based on a flight-proven terrain following radar, formerly known as terrain avoidance radar, developed by GD/Electronics. (This radar completed a several-month stretch of test and demonstration flights late last month.)

In terrain following, the radar enables an aircraft pilot, or autopilot, to fly blind at a fixed altitude above the ground, clearing all obstacles ahead. In contour flying, the radar not only allows constant altitude flight over all obstacles, but also shows the pilot how to fly around major obstructions.

The system will operate by automatic or manual control. A radar scope display shows the terrain features ahead in outline form.

In addition, the new lightweight system will be able to produce maps of terrain features thousands of feet below the aircraft.



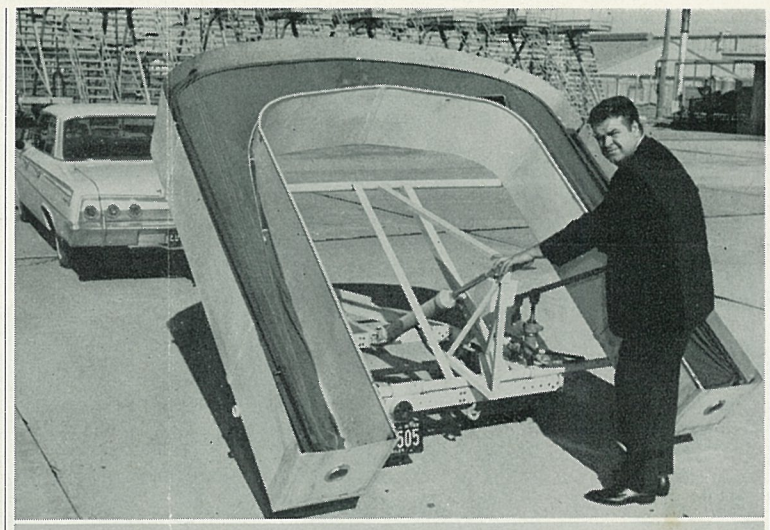
ADVANCED RADAR—Arthur R. Zagon, GD/Electronics — San Diego design specialist, indicates relative size of new compact radar system, developed by GD/E for use in any type plane.

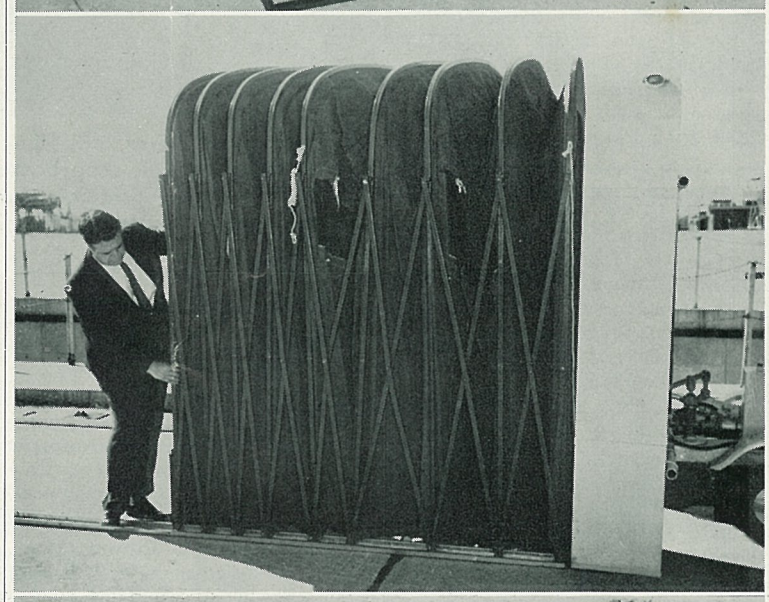
Dynamics Products Shown Convention

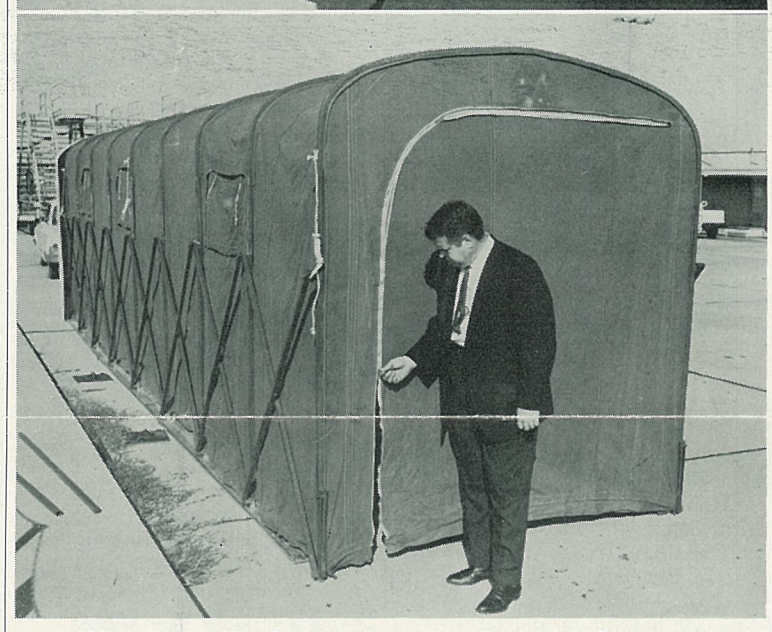
Products of two General Dynamics divisions were exhibited last week at the 1963 National Winter Convention on Military Electronics at the Ambassador Hotel in Los Angeles, Jan. 30-Feb. 1.

A booth sponsored jointly by GD/Pomona and GD/Electronics —San Diego displayed models of the Pomona-built Tartar and Mauler, and GD/E radar for the A3J, and terrain following radar.

GD/Electronics men attending included J. W. Colvin, manager of plans and programs; Payne Johnson, manager of communication; J. E. Bowen, manager Navy and Marine Corps requirements; D. O. Campbell, manager AF and FAA requirements; and L. S. Butler, senior electronic engineer.







"INSTANT" TENT—Sequence photos show Phil Cummins, Dept. 15 project liaison, in process of erecting collapsible tent. Cummins uses hydraulic pump to erect tent, which fits into 11-inch deep container. In next step he pulls tent out on steel rails, ordinarily used only on soft terrain. Below, Cummins zips end and job is finished.

Quickly Folded

'Instant' Tent Devised; Folds Into Horseshoe

When rain threatened postponement of an outdoor class in radiation detection at General Dynamics/Fort Worth, Phil Cummins, Dept. 15, came to the rescue with his latest development—a collapsible tent.

In a matter of minutes, Cummins erected a "classroom" 40 feet long, 8 feet wide, and 8 feet tall.

Made of 12-pound canvas and folding steel bows and girders, the tent appears adaptable to virtually any flat terrain.

On cement or a similar hard surface, the tent is simply rolled out on casters. In case of a soft surface—such as in mud or sand —steel rails would be laid.

The structure has six nylon windows with storm flaps, and is equipped with guy-ropes for securing in case of high winds.

Pick-up trucks or other conventional vehicles can be used to transport the tent, although Cummins has devised his own trailer for that purpose. The horseshoe-shaped unit, is of course, roughly the same size as the steel beams —but only 11 inches deep!

A hydraulic pump on the trailer is used to position the tent for opening. And once casters are installed, the tent can actually be rolled out by one person.

Weight of the tent alone is 340 lbs., while tent and trailer tip the scales at 1,080 lbs.

Cummins thinks a quick-erection tent could be used to advantage in constructing such things as field hospitals, disaster housing, bivouac areas, and standby crew huts.

Equipment such as missiles, ground support items, pods, and industrial supplies could also be stored conveniently and quickly, Cummins said.

GD/Astro Men Attend NASA Conference

Four General Dynamics/Astronautics executives will attend the Second Industry Program Plans Conference to be held Feb. 11 and 12 by National Aeronautics and Space Administration (NASA) in Washington, D. C.

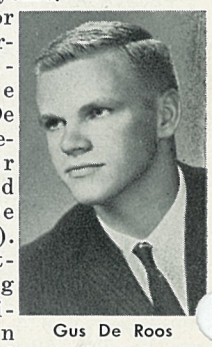
Attending will be W. H. Patterson, vice president—advanced product planning; F. J. Dore, director, advanced systems; Palmer Osborn, manager, market research and analysis; and F. A. Zylius, manager, ballistic launch vehicles and manned space systems.

The conference is designed for personnel of NASA contractor firms who direct long-range planning, research and engineering, and who are concerned with aerospace programs and project proposal formulation.

Behind Curtain

GD/Pomona Son Czech Visitor

Life in communist Czechoslovakia was observed firsthand by Gaston "Gus" De Roos, a summer employee at GD/Pomona for the past four years.



Gus De Roos

Gus, a junior at the University of Redlands, is the son of L. T. De Roos, senior design engineer (Dept. 6) and Marguerite De Roos (Dept. 22). He is currently attending the University's European branch in Salzburg, Austria.

During a recent three-day trip to Prague on an educational tour organized by the University, Gus had his first look at communism in action at the Austro-Czech border where he saw electrified fences, watchtowers, guards armed with machine guns and vicious German Shepherd dogs. It looked like a giant concentration camp, Gus said in a letter to his parents.

With a guide from "Cedok," the state travel agency, the students stopped first in a little town near the border. There they were almost mobbed by the townspeople who see very few Americans. They were very friendly and wanted to know about America.

In Prague the group stayed at one of the finest hotels. A once beautiful city, Prague is now ugly, drab, barren and lifeless, according to De Roos. He says there were almost no cars, the shops were almost bare and what they do have to sell is "junk" by Western standards. The people walking in the streets do not smile and it is very quiet.

Most people seem well-dressed and no one was starving but there is a very severe meat shortage. One person to whom Gus talked said he got meat about once a month and that one egg sells for about 50 cents.

De Roos reported that everything in Czechoslovakia is state-owned, even the smallest shops. The most predominant type of store in the downtown business district was the "Sovietska Kniha," the Soviet bookstore. Three types of literature are available—technical, cultural and Soviet propaganda. The communist "bible," "The Communist Manifesto," by Karl Marx sells for one American penny while a book about the U.S.A. costs $10.

Before going to Czechoslovakia, Gus thought that a majority of the people were "sold" on communism, but he found out that this was a misconception. In public people would not admit this but when talking to them alone they revealed their true feelings.

Most of the people he talked to were students about his own age and he had "boned up" on communistic doctrine before the trip so that he would be prepared to argue with them. But he said that the students wanted to know about America and wished they could come here. They thought communism was rotten and said they were very unhappy as were most of the people in the country.

The only advocate of communism that De Roos met was a young Cuban student. He had fought in the Cuban militia when he was 16 and was a staunch supporter of Castro.

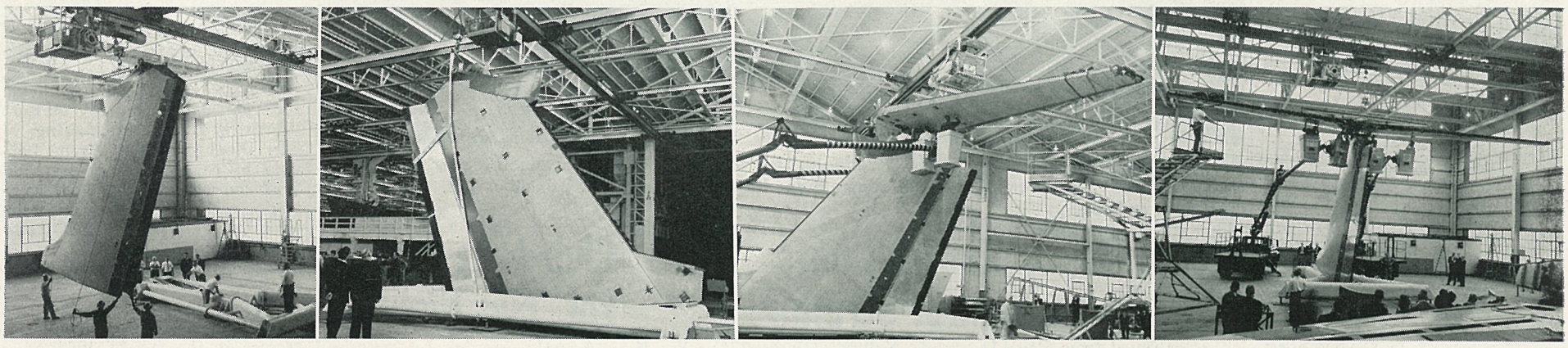
The highlight of his stay in Prague was a trip to the chief propaganda center. There he saw an anti-German and anti-American movie. (The Czech communists consider Germans and Americans the same people.) The film depicted everything bad in American life which the commies equated with the German atrocities in Czechoslovakia during World War II. The whole idea was to show what monsters Americans are and how similar we are to Germans.

GD

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 16, No. 4 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, February 20, 1963



FIRST MATE—Milestone in C-141 production at GD/Convair came last week with mating of vertical and horizontal stabilizers for first completed empennage. At left, vertical stabilizer is raised upright; center, rudder is hung; in next two shots, climax comes with lowering of huge horizontal onto vertical stabilizer. Empennage is static test article, due to leave San Diego plant for Lockheed-Georgia Co. in March. On hand from Lockheed to view mating were H. Lee Poore, C-141 manufacturing manager; N. F. Hill, material administrator for C-141 subcontracts; J. C. Bridges, manufacturing planner, all from Marietta, Ga.; D. H. Koozer, Carl Moore, Mel Thurmon, resident representatives based at GD/Convair. J. M. Adamson, GD/Convair C-141 program manager, praised crews' teamwork in meeting schedules.

'Fresh, Original Thinking' Called For by Horne

Charles F. Horne, lashed out at "sheep-like conformity" while speaking in San Diego early this month and called for fresh and original thinking in meeting the problems of industry.

The president of General Dynamics/Pomona and GD/Electronics-SD, addressed 300 GD/E and GD/Convair members of the Management Club gathered at the El Cortez Hotel Feb. 6.

His subject was "What Industry Wants in an Educated Man" and although he nodded respectfully toward the academically trained specialists he stressed management's need for the "broadly cultivated mind" steeped in the humanities as well as the sciences.

"Education is experience," he quoted John Dewey and stressed that the young man entering industry soon will be judged on what he can DO rather than his depth of theory.

For the successful manager Horne listed these as requisites: drive, character (honesty and integrity), prompt acceptance of responsibility, ability to adapt and work with others, a knack for problem solving, imagination and originality.

"And never stop learning . . ."

"Men differ more in the utilization of their abilities than they do in their innate abilities," he declared, referring to a quotation of Charles Darwin.

"The difference between the professional and the amateur is that the professional produces his best efforts ALL the time, while the amateur does it when the spirit moves him.

"Don't worry about who gets the credit. Get the job done and the credit will follow . . ."

Horne placed great emphasis for the management man on the ability to communicate (if you can't explain your ideas, what good are they!) and pointed out that this ability includes that of listening.

"Listen and get the other fellow's point of view. You may learn something, and you certainly will save time."

Introduced by John L. Lombardo, GD/E general manager, were GD/Convair president J. H. Famme; R. H. Biron, Corporate vice president; E. R. Fink, Management Club president; and George Oatman, general chairman for the GD/E "night."

Dennis Newlon, general foreman of GD/E electronic assembly, emceed the raffle in lively fashion.

Attending from Pomona as special guests of the Management Club were Roy Williams, president of the Pomona group; Lynn Wendt, treasurer; and John Baird, board of control.

Heart Association Gets $2,000 Grant

San Diego County Heart Association received $2,000 through action of GD/Convair Employees' Con-Trib-Club Committee early this month.

Also, a contribution of $2,000 to the annual Easter Seal drive of San Diego County Society for Crippled Children passed second approval unanimously. Final action entitles Con-Trib-Club members to use the seals without further donation.

$52.7 Million Net Income Seen For 1962

Estimated net income of General Dynamics Corporation for the year ended Dec. 31, 1962, is approximately $52,700,000, equivalent to $5.27 per common share, Roger Lewis, president, announced this month.

Due to the tax credit resulting from the prior year's loss, no federal income tax has been charged against the corporation's income, although provision has been made for taxes on earnings of subsidiaries.

Consolidated net sales for the year ended Dec. 31, 1962, amount to approximately $1,896,000,000.

Bank loans outstanding at the end of 1962 stood at $89,000,000, compared with $155,000,000 at the end of 1961, and with a peak of $187,000,000 in February, 1962.

Working capital increased from $49,700,000 at the end of 1961 to more than $118,000,000 at the end of 1962.

According to official government figures, General Dynamics in 1962 ranked first among military prime contractors in new Department of Defense awards for research and development.

C. H. 'Tex' Clements Dies in Germany

C. H. "Tex" Clements, GD/Convair representative in support of USAFE F-102 squadrons, died suddenly Feb. 14 from aftereffects of a stroke.

He had been based at USAFE Hdqtrs., Wiesbaden, Germany, since late 1958. Clements first joined the corporation at Fort Worth in 1945, transferring to GD/Convair field service in 1954.

Paperwork Cut In Cost Move

Cost of in-plant paperwork at GD/Convair will be reduced by $170,764 annually as a result of a recent drive to eliminate department reports which have outlived their usefulness.

Over 1,000 division reports were examined during the year by systems and procedures which has prime responsibility for control of repetitive reporting activities. Of these, 179 were found to be no longer needed, resulting in the saving which substantially cuts the expense of paperwork, according to R. C. Hartwig, manager of systems and procedures and data processing. Total cost of preparation and distribution of departmental reports runs well over a million dollars a year.

Material and production services department (Dept. 4) led all departments with a savings of $76,068 by discontinuing 54 reports. Engineering dropped 57 to save $31,432.

All departments, from those requiring the most reports, such as accounting and industrial relations, to others using only one or two, took a close look at their in-plant paperwork for actual need. Report monitors within departments work closely with systems and procedures in a continuous review of necessity, fre-

(Continued on Page 2)



PAPER CUT—G. W. Zahrte (seated), manager of material and production services, receives report on outstanding results of department's efforts in eliminating unnecessary reports from Art Ratz, staff assistant, and D. C. Moser of material procedures. Stack represents part of 54 different reports slashed by Dept. 4.



CLUB GATHERING—At February Management Club meeting in San Diego are, from left, Joe Famme, president, GD/Convair; Charles Horne, president of GD/Pomona and GD/E-San Diego; Club President E. R. Fink; R. H. Biron, General Dynamics vice president; J. L. Lombardo, GD/E-San Diego general manager.

Proposals For New Business Given Value Control Scrutiny

New production methods, new business proposals, evaluation of production costs were spotlighted in the latest value control seminar at General Dynamics/Convair.

Fifteen men, divided into three teams, devoted their 30 hours during seminar No. 12, Jan. 23-Feb. 1, to consideration of different ways and means to bring down production costs.

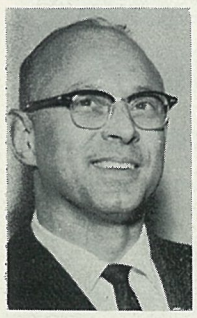
Team No. 1 had the task of reviewing various types of metal cores for SATS mats which would meet performance and weight specifications at a lower cost. Over 400 suggestions on materials and processes were thrown out during the brain-storming session with 15 of the best fully analyzed. Nearly a dozen GD/Convair engineers and purchasing specialists and seven outside vendors were contacted for factual information.

Significant was the team's evaluation of the SATS mats automated line, now nearing completion at Plant 1. The production facility was termed completely satisfactory and outstanding in its present concept.

Eugene Green was project leader with team members including John Rognlie (Dept. 25), Vern Winslow (Dept. 6), John

(Continued on Page 2)

Log Book Entries



Frank Machado Jr., GD/Convair Dept. 6-300, received his 25-year service emblem recently from B. J. Simons, chief engineer.

Service Emblems

CONVAIR

Service emblems due during the period Feb. 16 through Feb. 28.

Thirty-year: Dept. 15-0, John Doig.

Twenty-five-year: Dept. 48-03, E. L. Brown; Dept. 171, W. T. Aleckner Jr.

Twenty-year: Dept. 48-76, Samuel Witkoff: Dept. 91-0, Ernestine S. Reed; Dept. 171, Thomas Estrada, F. J. Gianola, R. A. Romo, J. K. Seid, R. E. Williams.

Fifteen-year: Dept. 25-6, J. D. Sappington; Dept. 48-11, L. L. Walker; Dept. 93-6, Ethel L. McMurray; Dept. 102, J. W. Weisman; Dept. 115, R. G. Wheeler; Dept. 133, Roger Crowe; Dept. 171, Viola M. Bohrer; Dept. 401, Frederick Evers, R. N. Hanby.

Ten-year: Dept. 6-300, Virginia B. Feiler; Dept. 15-0, Hazel D. Schwichtenberg; Dept. 16-6, R. L. Bason; Dept. 25, R. G. Hopkins, A. W. Matthews, J. C. Slater; Dept. 115, L. E. Wilson; Dept. 400-4, Bernice B. Burnett.

GD/ELECTRONICS

Fifteen-year: Dept. 30-00, G. P. Wood.

Ten-year: Dept. 41-20, R. J. Fulgham; Dept. 58-00, T. A. Powell; Dept. 71-00, S. M. Martinez.

Retirements

CONVAIR

BROWNLEE—Laura B., Dept. 120. Seniority date Feb. 12, 1951, retirement effective June 12, 1962.

CAVANAGH—David F., Dept. 25-1. Seniority date Oct. 18, 1951, retirement effective Jan. 22, 1963.

DARROCH—Reginald C., Dept. 16. Seniority date June 29, 1956, retirement effective Feb. 1, 1963.

DIEBOLD—Nellie H., Dept. 401-7. Seniority date Feb. 14, 1952, retirement effective Jan. 31, 1963.

GRAY—Bessie J., Dept. 149. Seniority date Nov. 1, 1950, retirement effective Dec. 16, 1962.

HAVENS—Milo G., Dept. 31. Seniority date Nov. 9, 1942, retirement effective Feb. 6, 1963.

HESELIUS—Henry L., Dept. 146. Seniority date Feb. 16, 1955, retirement effective Nov. 19, 1962.

HORTON—Bernice F., Dept. 120. Seniority date Jan. 16, 1952, retirement effective Jan. 31, 1963.

HURLEY—Henry, Dept. 117. Seniority date July 26, 1950, retirement effective Jan. 17, 1963.

MARTIN—Russell G., Dept. 25-1. Seniority date Sept. 22, 1950, retirement effective Jan. 30, 1963.

SCHLOTTMAN—Thomas W., Dept. 3-1. Seniority date Oct. 14, 1948, retirement effective Jan. 21, 1963.

SCOTT—Leonard O., Dept. 25-1. Seniority date Aug. 11, 1950, retirement effective Jan. 31, 1963.

SHAFER—Henry W., Dept. 401-4. Seniority date Dec. 19, 1951, retirement effective Feb. 20, 1963.

WHITLOCK—Charles F., Dept. 133. Seniority date July 6, 1948, retirement effective Feb. 8, 1963.

GD/ELECTRONICS

FARRELL—Frederick L., Dept. 24-00. Seniority date Jan. 16, 1951, retirement effective Jan. 31, 1963.

Rider-Driver

CONVAIR

RIDE WANTED—7:30 a.m. to 4:30 p. m. or 8 a.m. to 5 p.m., from Escondido to Plant 1. Lois Woline, ext. 1245, or home phone, 745-8158.

RIDE WANTED—3:30 p.m. to 12 midnight, from 3rd Ave. & Washington St., El Cajon to Plant 1. Jack Page, home phone, 442-9098.

RIDE WANTED—8 a.m. to 4:30 p.m. from Lemon Grove to Plant 1. Kenneth Potter, home phone, 463-4584 or plant ext. 522.

Deaths

CONVAIR

RUSSELL—Cecil W., Dept. 97. Died Feb. 8. Survived by wife, Juanita L. Russell.

Personals

CONVAIR

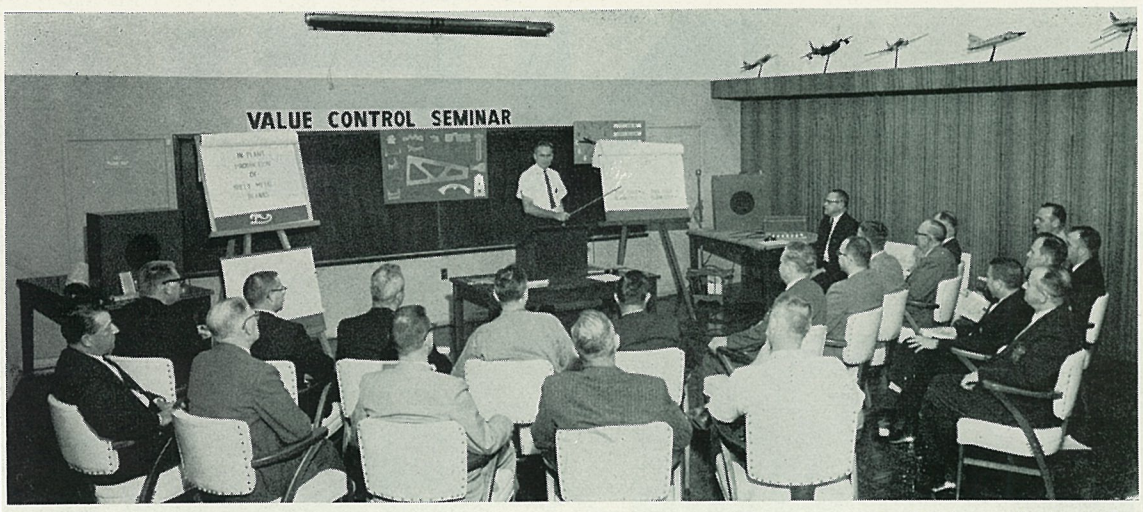
Our sincere appreciation for the many kindnesses shown us by friends at GD/Convair and GD/Astro upon the death of my husband, William Strukelj.

Mrs. William Strukelj and family.

Lost & Found

CONVAIR

FOUND—Two rolls of Verichrome Kodak 620 film in Convair parking lot. Contact Lenore Knutson, ext. 2748.



SEMINAR WINDUP—GD/Convair "graduates" of value control seminar No. 12 hear H. A. Mohr, Dept. 101 assistant foreman, explain concrete results of value analysis principles put to work after classroom training.

Proposals For New Business Given Value Control Scrutiny

(Continued from Page 1)

Rittweger (Dept. 6), Joe Medina (Dept. 141), Harry Warn (Dept. 34).

Team No. 2 recommended a revision in configuration and revised method of fabrication which will considerably lower the division's bid on a new business proposal.

On the team were R. W. Casebolt (Dept. 6), P. L. Akins (Dept. 6), A. H. Apple (Dept. 25), W. J. Enlund (Dept. 171), W. H. Mills (Dept. 400), with John Strachan, project leader.

Cost of producing a transport spares part was investigated by Team No. 3 as first of a series of projects reviewing spares production to reduce unnecessary costs wherever possible.

L. N. Kenyon, as project leader, headed the team of J. P. Grimsley (Dept. 42), H. M. Harvey (Dept. 6), H. Staufenbeil (Dept. 171), D. E. Stouffer (Dept. 6).

Certificates were presented by H. A. Mohr, Dept. 101 assistant foreman, who with H. M. Woodard, explained the importance of applying value analysis in all areas following classroom indoctrination. They pointed up their remarks by outlining the vital part value control principles played in their development of a new blanking procedure.

Seminar No. 13 will start next week, with first session Feb. 25.

Shifts Make Room For Material Dept.

Relocations within GD/Convair Plant 1 are clearing the way for the move of some 100 material people from Rose Canyon by the first of the month, as office space in that facility is occupied by GD/Astro material functions.

The area along the north side of the second floor of Bldg. 5 is being vacated for the incoming functions of purchasing, material analysis, shortage group, material costs and budgets, vendor termination group, GFP personnel, material supporting services.

Material sections already occupying Bldg. 5 space have been rearranged to consolidate all of material department in adjacent office locations.

Spares control will move into the southwest mezzanine of Bldg. 1. The vendor interview room has been moved to the lobby of Bldg. 5.

Remaining at Rose Canyon are approximately 300 GD/Convair people. Inventory records and cost accounting are relocated in Bldg. 1. Program accountability is joining material reclamation in Bldg. 2. Receiving, shipping, and material stores also will remain at the off-site location.

Shifts within Plant 1 have rearranged engineering on the second and third floor of Bldg. 5, centralized all of program management on third floor, Bldg. 5, and consolidated division estimating in I area of Bldg. 5, second floor.

An unrelated move the first of February brought contracts department from Bldg. 19's fifth floor into the Bldg. 1 administration area.

Engineering personnel office also will be moved from first floor of Bldg. 51 to the second floor of Bldg. 5, north of the lobby entrance, by the first of the month.

Retirement Benefit Data Distributed

Individual retirement benefit statements will be distributed tomorrow to all GD/Convair, GD/Electronics, Advanced Products salaried and hourly and Corporate hourly people.

J. L. Terrien, GD/Convair accounting payroll supervisor, said that the annual benefit records will be in the hands of all department heads tomorrow (Feb. 21). They, in turn, will be responsible for passing the statements to their personnel on both first and second shifts, or returning the forms to payroll office if individuals can not be located.

As this is the only information prepared on retirement benefits, employees are urged to keep the statements for their records.

Bowlers Entering Plant Tournament

Bowlers at GD/Convair and GD/Electronics are now signing for the annual CRA plant championships scheduled for April 20-21, 27-28 at Pacific Recreation alleys.

Entry blanks were placed last week in all alleys where CRA leagues bowl and are now available at CRA office in employee services, Bldg. 32, Plant 1.

Commissioner Jim Hayman urges all who intend to enter men's or women's singles or doubles or mixed team events to register as soon as possible.

Paperwork Cut In Cost Move

(Continued from Page 1)

quency, distribution, method of preparation, and cost.

This constant survey assures GD/Convair that each report now circulated, and any proposed, is actually needed, both for content and at the frequency it is issued, points out Hartwig.

He emphasized that the reports review program and continued cooperation of all departments will bring lasting benefits to the division in its overall cost reduction campaign.

Club Lays Plans For 'Fun Night'

A gala evening is promised Management Club members at GD/Convair and GD/Electronics when they gather at Mickey Finn's for "Fun Night" on March 13.

Italian "cuisine," old-time movies, topped off by the lively tunes of Mickey Finn's Band will provide plenty of entertainment from 5 to 8 p.m.—all at the bargain-rate of 99 cents apiece.

In addition, J. L. Terrien, nominating committee chairman, will disclose the committee's slate of officer candidates for the coming club term.

Tickets go on sale at regular outlets next week. Manufacturing departments are in charge of the special fun session with F. H. McLaughlin general chairman.

Rutledge Takes Systems Post

J. E. Rutledge has been named manager of systems and procedures of General Dynamics/Electronics—San Diego, according to an announcement by H. F. Johnson, controller.

Rutledge, who had held the post of assistant manager of systems and procedures for GD/E since late last year, succeeds F. L. Farrell, now retired from the company.

A native of Kansas, Rutledge first joined the company at Fort Worth in 1941, transferring to San Diego in 1949. From 1953 until he rejoined the company in 1961 he held responsible controller and accounting positions with several West Coast companies.

During 1961 he was a senior auditor with Corporate Office, going to Advanced Products in early 1962. He joined GD/Electronics in the fall of 1962.

GD/E Material Dept. Supervisors Named

Three supervisory changes within material department of General Dynamics/Electronics—San Diego are now effective.

R. E. Dieter has transferred to GD/E, Plant 1 as supervisor in charge of material control operations; K. R. Farnsworth now is located at Plant 2 (Hancock St. facility) as supervisor of material control and stores operations. S. N. Garff assumes responsibilities of shipping and receiving at Plant 2 as traffic administrative supervisor for both facilities.

Fred Matson's CIP Will Save GD/E $5,523 in Cleaning Chore

Fred W. Matson received the first MacSave-it trophy to go to a General Dynamics/Electronics man for his Cost Improvement Proposal which will save the division $5,523.

Appropriately honored at the GD/Electronics-sponsored Management Club meeting early this month, Matson was commended by General Manager John L. Lombardo for his idea which eliminates costly cleaning and re-identifying operations.

As a result of action initiated by Matson, GD/Electronics has turned over to the Disabled Veterans organization the cleaning of leads, protection of identification markings, and pre-packaging of all capacitors and resistors used in GD/E electronic assembly operations. Transfer of this time-consuming work will save GD/E some 2,500 manhours.

Matson, assistant foreman in GD/E receiving and stores under T. E. Morris, manager of material operations, has been with the corporation for over 21 years. He had been with GD/Convair in material department since 1941 before transferring to GD/E last fall.





MUG AND SAVE-IT—At top, F. W. Matson, GD/E assistant foreman, at right, was tabbed by Management Club first MacSave-it from GD/Electronics for money-saving idea. Presenting trophy is John L. Lombardo, GD/E general manager at San Diego. Below, Tom Moffett, manager of industrial accounting at GD/Electronics—SD (right), receives Mug of Month from General Manager Lombardo for years of civic and club activities while with GD/Pomona division.

General Dynamics NEWS

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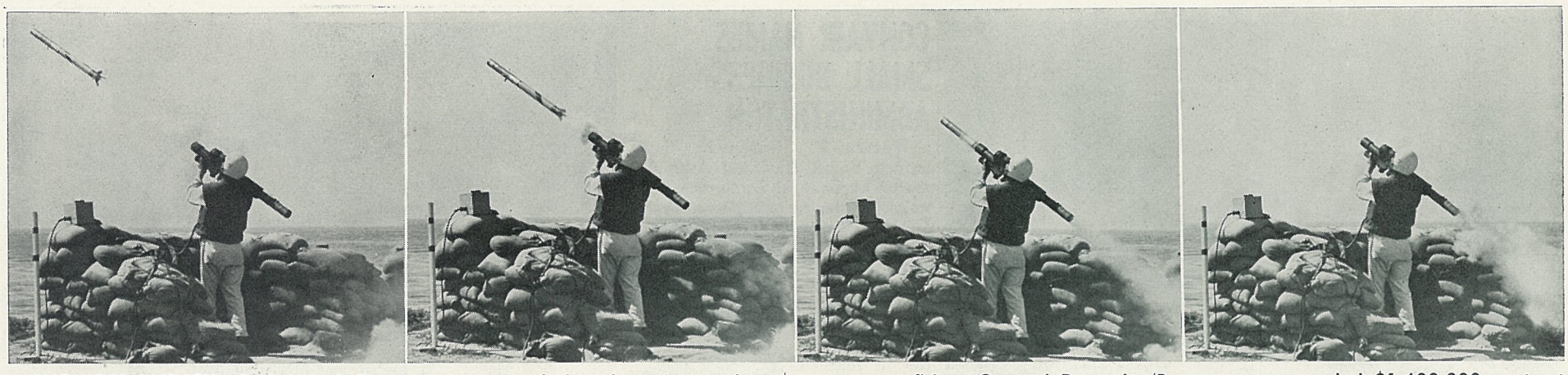
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Fort Worth Editorial Offices, Col. 72, Adm. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and Stromberg-Carlson, editorial offices, 100 Carlson Road, HUbbard 2-2200, ext. 2555. Gordon Morison, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.



SHOULDER LAUNCH—Redeye, missile weapon system designed to give combat troops capability of destroying low strafing or bombing aircraft, is shown during recent test firing. General Dynamics/Pomona was awarded $1,600,000 contract Feb. 4 by U. S. Army for continued development of infrared, surface-to-air missile.

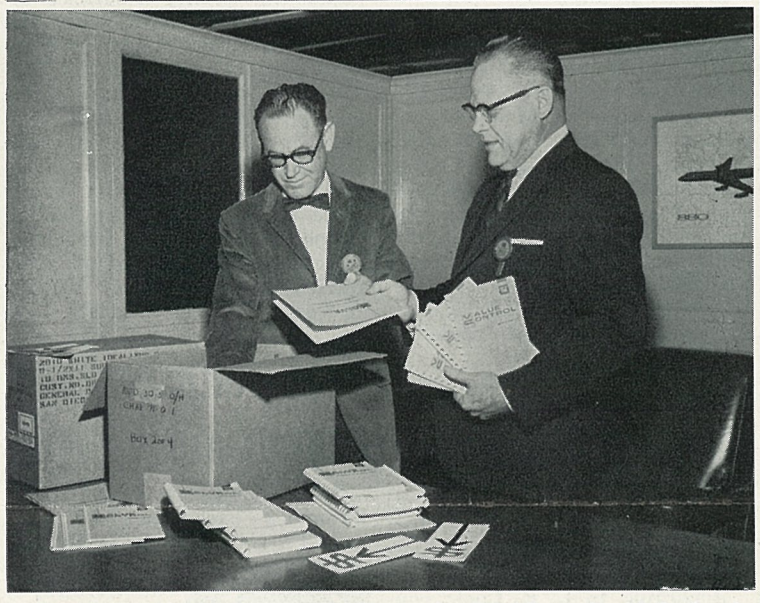
Contract Continues Development Of Army's Shoulder-Fired Redeye

General Dynamics/Pomona has been awarded a $1,600,000 letter-contract for continued development of Redeye missile system, the U. S. Army announced Feb. 4.

Redeye is an infrared, surface-to-air missile that will be shoulder-fired. It is a composite structure containing propellant, an electronic guidance system and a high-explosive warhead.

The missile launcher, which outwardly resembles the bazooka of World War II, is about four feet long, three inches in diameter and weighs about 20 pounds. Both missile and launcher can be carried by one man through underbrush and rugged terrain where no other types of anti-aircraft weapon could be transported. The launcher tube also serves as a shipping container.

The Army Missile Command, Redstone Arsenal, Ala., an element of the Army Material Command, has overall responsibility for Redeye. Lt. Col. H. L. Claterbus is Redeye project officer.



OFF THE PRESS—Howard R. Kennedy, GD/Convair chief of publications, and H. P. Williams, manager of value control, unpack first shipment of value control programmed instruction TechBooks, now ready for distribution.

Complete Value Control Course Made Available to Divisions

Final revised edition of value control programmed instruction, compiled at General Dynamics/Convair, now is available in published form for other GD divisions and industries throughout the country.

Descriptive brochures, listing in detail advantages of the newly-developed method of teaching value engineering, are going to all aerospace and other manufacturing companies, large and small, throughout the country.

First on the list to receive the advertising material will be members of the Society of American Value Engineers and Electronic Industries Association who have expressed definite interest in GD/Convair's forward strides in value analysis training, said H. P. Williams, value control manager.

In fact, Williams is already busy answering the near 50 requests from companies and government agencies interested in setting up their own programs along lines similar to those used at GD/Convair.

"Value control is becoming a must for companies bidding for defense contracts," stressed Williams. "The new Armed Services Procurement Regulation makes it mandatory that all companies receiving contracts of $100,000 or over have active value engineering programs in operation.

"And from our own in-plant experience, we can prove that GD/Convair's step-by-step programmed instruction course reduces learning time by at least 25 per cent, requires less direction and guidance, gives the student a better understanding of what to do at each phase.

"With this carefully prepared and tested material, seminars can be conducted in a much more professional atmosphere and run continuously."

Publication of the complete set of five books and instructor's manual culminates almost a year of intensive research, compilation, and testing through cooperative efforts of GD/Convair technical publications, educational services, and value control functions.

For information on GD/Convair's Value Control Course write H. P. Williams, Manager Value Control, General Dynamics/Convair, P.O. Box 1950, San Diego 12, Calif.



GLOTRAC Space Tracker Promises High Mobility, Increased Accuracy

GLOTRAC, globe-spanning space vehicle tracking network built by General Dynamics/Astronautics, passed a production milestone recently with commencement of systems testing on the first tracking equipment trailer.

This first trailer is scheduled for shipment to San Salvador, B.W.I.

GLOTRAC was designed and developed by GD/Astro for Air Force Missile Test Center, Cape Canaveral, as a natural outgrowth of the company's highly successful AZUSA system, versions of which have been operational since 1953. GLOTRAC will provide even more precise tracking and offer increased mobility as well.

Work at GD/Astro is under direction of S. L. Ackerman, vice president and program director, electronic programs.

Equipment housed in the trailers includes GLOTRAC's unique continuous wave (CW) measurement system, which utilizes both the Doppler principle and the phenomenon of electromagnetic phase delay.

"Basically," explained T. H. Scholder, GD/Astro GLOTRAC project manager, "Doppler is an effect of relative velocity on frequency, usually illustrated by the way in which the whistle of an approaching train rises in pitch (its frequency rises); then becomes lower as the train passes and moves away."

GLOTRAC applies these principles electronically in measuring position, rate and direction of movement of space vehicles. By combining information from a number of precisely located stations, computers derive extremely accurate trajectory data.

The 40-foot vans housing this equipment can be transported by air (in planes such as the C-124 or C-133) to provide GLOTRAC with great flexibility to meet changing mission requirements.

Within each trailer, equipment is mounted in standard 19-inch racks on horizontal chassis with tilting drawer-slide arrangements. Trailers are air conditioned, humidity controlled, and include an operator's position and standard teletype and communication equipment.

Skill in electronic miniaturization, which, in the course of AZUSA development trimmed weight of the airborne transponder from 100 to 20 pounds, is again demonstrated with GLOTRAC.

The airborne transponder for GLOTRAC occupies only 140 cubic inches; weighs only 5¼ pounds, and operates on some 38-watts power.

For maximum reliability, GD/Astro uses high-density "welded module" construction in the transponder, while modular construction provides for easy field maintenance.

Initial GLOTRAC installation will consist of one "segment" comprised of several "stations." This segment includes a digital computer from which information is fed to a central data processing facility at Cape Canaveral.

The segment centers at the Cape, where the GD/Astro-built AZUSA Mark II is called into play, and includes several downrange stations.

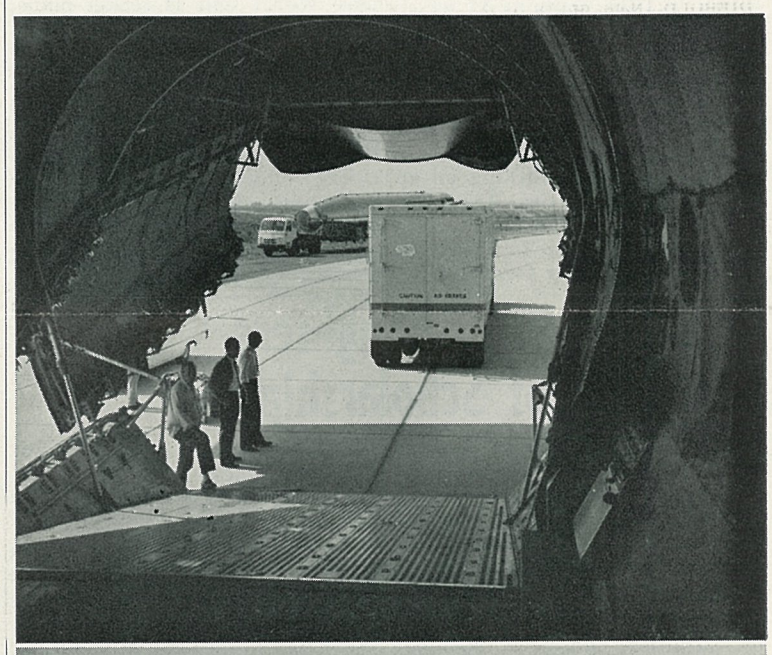
For space tracking of the future, GLOTRAC designers have provided the system with a built-in "growth potential." Ultimately it can become a single integrated CW system, no longer requiring added pulse radars and airborne pulse beacons. Accuracy of track can be improved, communication can be refined, and the ability for space communication, telemetry and command functions through the GLOTRAC transponder can be added.

Col. R. S. Maloney Jr., deputy commander for range development; Col. George T. Galt, range program director; and Lt. Col. W. K. Hoey, chief, GLOTRAC project office, are key personnel at AFMTC directing this program.

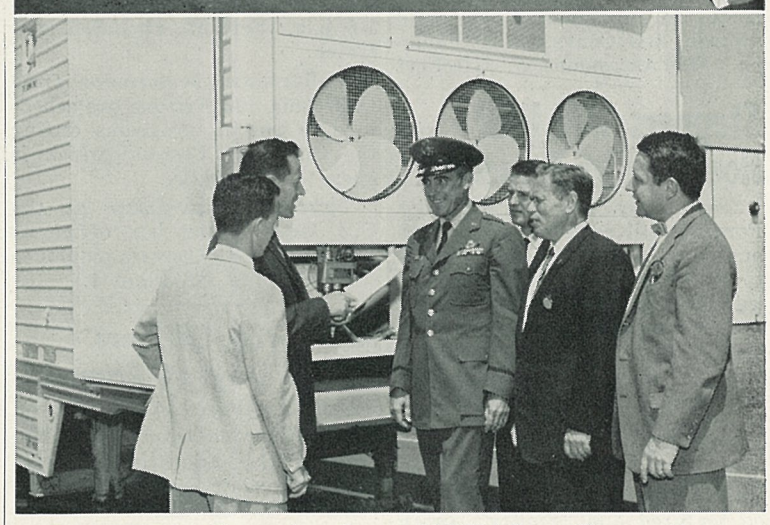
At GD/Astro, L. F. Bell is assistant GLOTRAC project manager; D. C. Prim, manager of trajectory measurement and control; J. F. Langston, manager of field operations; and C. A. Paul, manager of manufacturing operations.

Group engineers include H. L. Copeland, ground tracking design; G. T. Herring, tracking equipment; B. G. Anderson, vehicle tracking design; L. N. Lawhead, tracking systems parameters; and R. J. Jacobs, system improvement.

Contributing to GLOTRAC development were Jim Crooks, Bob Weaver and Mal Cox, long associated with AZUSA programs, while Bob Leger and Bob Bowers assisted in conceptual studies and are active in GLOTRAC trajectory analysis.







ON WHEELS—First units of new GLOTRAC satellite tracking system developed by GD/Astronautics will go to British West Indies soon. In top photo, GLOTRAC van is test loaded aboard C-133. Center: three tracking stations are shown in test area at GD/Astro. Below, key personnel in project, Bob Alexander, Tom Scholder, Lt. Col. W. K. Hoey, Steve Roach (AFMTC Tech Rep), GD/Astro Vice President Sam Ackerman, L. Ferris Bell.



MODELER—J. Ned Shaw, GD/Astro Dept. 568-1, holds prize-winning Skyray model, carved from basswood, one of scale model fighting craft in his collection, which—some day—will include one from every country in world.

Big Project

Model Plane Maker Planning Midget For Every Country

A lunch-time hobby is well on its way to becoming a lifetime project for J. Ned Shaw, GD/Astro dynamics lab test engineer at Plant 1.

Shaw, who spends his lunch periods working on his meticulously faithful scale models of military craft, plans to duplicate, in miniature, at least one plane from every country in the world before he's through.

So far, his model collection, begun in 1956, contains 11 which will eventually become a part of his ambitious project. They are fighting planes of Germany, Japan, Hungary, Spain, Uraguay, Paraguay, China, Canada, Holland, Sweden, South Korea.

He is currently working on an F4U fighter of the Argentine Navy and will start next on a 1938 French plane incorporated into the Estonia air force.

"I try to duplicate exactly a specific plane, not merely a type," explained Shaw. And he searches aviation magazines and books and scans old movies for markings to correctly identify his foreign planes.

Shaw's present collection totals 35, ranging from the Wright brothers' Kitty Hawk to a B-58 Hustler. Tiniest are a Fokker World War I tri-plane and Japanese World War II rocket plane, measuring about three inches from tip to tail. Largest is the F4D Skyray, carved entirely from basswood, which won him an elaborate trophy in a 1959 modeling contest.

The collection is in demand for community displays—seen at Del Mar during several county fairs and often at the Naval Training Center.

Dynamics Sons, Daughters Reminded of Scholarships

Sons and daughters of General Dynamics families in the San Diego area who intend to qualify for National Merit Scholarships must contact their student scholarship counselors immediately.

Qualification examinations will be held in San Diego high schools on Saturday, March 9. Applications must be made well before that date.

Second-semester juniors and first-semester seniors who plan to enter college in 1964 are eligible to take the tests, first step toward scholarships awarded in the spring of 1964.

Top-scoring students in the exams this March will be semi-finalists. These will compete in second examinations late this year to decide winners.

General Dynamics provides 12 scholarships, apportioned among its divisions, under the National Merit Scholarship program. Last year, 11 GD sons and daughters from six divisions received awards. GD/Convair, GD/Pomona, GD/Astronautics, GD/Fort Worth each had two winners; GD/Electronics at San Diego, one; and GD/Electric Boat, Groton, Conn., two.

Scholarships range from $1,000 to $6,000, divided over four years of college work. Amount of the award is based on the amount which the family and student can provide, and cost of college fees. Scholarships may be used toward collegiate study in any field.

Steppers Will Host Hoedown at Pomona

Convairiety Steppers at GD/Pomona will celebrate their 10th anniversary by acting as hosts to the annual all-General Dynamics Hoedown March 2.

Steppers and members of the square dance groups at GD/Convair and GD/Astro will dine together at 6:30 p.m. in Palomares Community Center, Orange Grove and Cucamonga Ave., Pomona.

Dancing will begin at 8 p.m. Guest callers and live music will be featured and "Smitty" Smith will act as master of ceremonies. Commissioner Lloyd Scarborough said that Pomona dancers are invited to attend the dance but must make a donation of $2 per couple. Steppers and members of the two San Diego clubs will be admitted free.

GD/Convair's Gerde On Puppet Program

Duane Gerde of GD/Convair Dept. 400 will be on the program of the coming Pacific Puppet Festival, being held in San Diego for the first time this weekend, Feb. 22-24.

Gerde, an expert in puppetry, will give a demonstration on marionette articulation during the workshop program set from 1-5 p.m., Feb. 22, at U.S. Grant Hotel.

Well-known performers from California and Arizona are scheduled to put on programs during the three-day Festival which is open to the public.

Tickets are available at the U.S. Grant Hotel box office as well as at GD/Convair employee services, Bldg. 32, Plant 1.

Air Force Officers Spend Day at Convair

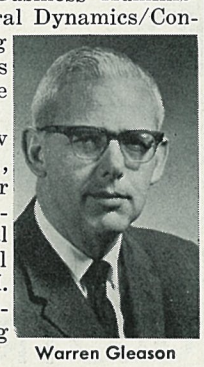
Four Air Force officers, based at GD/Astronautics during the year in the Education-With-Industry program, spent a day last week at GD/Convair.

Lt. Col. Vince Black, Maj. Walt Wenberg, Capt. Ted Goode, Capt. Dale Picardat spent Tuesday touring the C-141, SATS mats, and Little Joe II production areas.

GD/Convair educational services coordinated the visit.

CONVAIR NAMES SMALL BUSINESS ADMINISTRATOR

Warren E. Gleason has been named Small Business Administrator at General Dynamics/Convair, replacing V. M. Burns who has left the company.



Warren Gleason

In his new post Gleason, former vendor claims negotiator in material department, will report to W. H. Parry, general purchasing agent.

According to Parry, the Small Business Administrator has complete responsibility for GD/Convair's vendor relation activities and is in charge of all Small Business Administration program and status reporting. He also is responsible for survey and evaluation of present and potential sources of supply.

Gleason will represent GD/Convair in support of San Diego Chamber of Commerce's current "Try San Diego First" campaign.

He joined the division in 1950 and has been in material and purchasing functions ever since as senior buyer, buying supervisor, and vendor claims negotiator since 1957.

A native of California, Gleason received his BS degree in industrial management from the University of Arkansas and continued his formal education with graduate study in industrial engineering at Purdue University where he also instructed in accounting and mathematics.

LERMER AUTHORS HANDBOOK CHAPTER

A section of a forthcoming reference book, published under auspices of the American Society of Tool and Manufacturing Engineers, is authored by a General Dynamics/Convair engineer.

August S. Lermer of Dept. 6-2 contributed the chapter on graphical computing methods for the Manufacturing Planning and Estimating Handbook, which will be off the press in mid-March. He compiled his manuscript at the request of the Society more than two years ago when plans for such a handbook were first initiated.

Lermer, who joined GD/Convair in 1956 as a senior dynamics engineer, has had several other articles published in recent years. "A Graphical Analog Computer," appeared in the February, 1959, issue of Electrical Manufacturing, and his article, "How Temperature Affects Hydraulic Servo Performance," won $100 in the 1959 Hydraulics and Pneumatics prize paper contest and was published in the June, 1960, issue. The same magazine accepted a second, "We Need Simpler Design Methods," for its December, 1960, issue.

A paper, "A Temperature-Response Diagram," by Lermer was presented at the 1961 Society of Automotive Engineers National Aeronautic Meeting in New York.

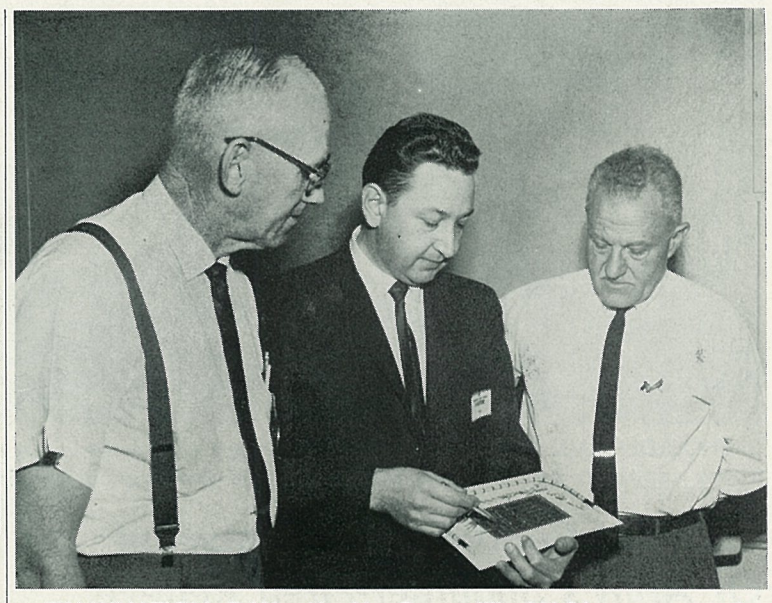
Toastmasters' Club Sets Weekly Meeting

Dynamic Toastmasters' Club No. 457 will meet in regular session tomorrow evening (Feb. 21) at a coffee and dessert meeting in Convair executive dining room at 6 p.m.

All members and interested GD men in the San Diego area are urged to attend the speaking group's weekly session. Five new members, Ralph McIntire, Ernest Kling, Alexander Stebbins, Gilbert Siegmund, and Henry Poniktera, were inducted into the club last month.

Selection of new officers for the coming club year will be decided at the March 7 meeting.

Anyone interested in joining is urged to call Bob Byron at ext. 4345, Astro main site, or Larry Sweeney, ext. 1687, Convair Plant 1.



EXAMINATION DAY—M. H. Camomilli, NASA representative (center), closely examines sample board prepared in GD/Convair soldering school before certifying as L. E. Cook (left) and H. W. Rubottom, educational services, look on.

Electronic Assemblers Okayed As Up to NASA Specifications

Twenty-eight General Dynamics/Convair electronic assemblers have been certified to NASA specifications in the division's soldering school since it received preliminary qualification in mid-December.

Formal approval of GD/Convair's continuing soldering program came last month from Dieter Grau, director of quality assurance division of NASA's Marshall Space Flight Center, Huntsville, Ala., H. W. Rubottom of educational services announced. Physical setup and equipment were found to comply with basic requirements established at the Space Flight Center for NASA approved soldering schools.

Five classes, 40 hours each, have trained hand-picked GD/Convair, GD/Electronics people most closely involved in NASA and other government subcontract work. In addition, five supervisors, three from inspection and two from experimental, have taken the complete course.

According to L. E. Cook, educational services instructor, those chosen to take the advanced training must be experienced beforehand. In the classes, they are taught the techniques and procedures required under NASA specifications which demand high quality and precision work and consistent workmanship.

Each is evaluated on test projects prepared in the school, work attitudes and work habits. Sample circuit boards first are evaluated and graded by Cook, a NASA certified instructor, then judged for final certification by M. H. Camomilli, quality assurance division representative with the West Coast field office of Marshall Space Flight Center.

So far, all who have gone through the course have been certificated with above average standings, said Cook, who will be qualified to certify GD/Convair students following recertification at the West Coast NASA school.

Next class at GD/Convair started this week (Feb. 18) for at least 15 chosen students.

Dynamics Joins Engineer Week

General Dynamics Corporation engineers throughout the San Diego area will join with others across the nation in the coming week to observe National Engineers' Week activities.

Many Dynamics men and women will share the job of conducting this event, as they have in planning it.

Key San Diego parts of the program include: a 7 p.m. Feb. 22 dinner at the OceanHouse; a careers conference for high school students at the Conference Bldg., Balboa Park at 10 a.m., Feb. 23; and free engineering exhibitions at the Electric Bldg., Balboa Park, Feb. 22 and Feb. 23 from 10 a.m. to 9 p.m. and from 1 p.m. to 9 p.m. on Feb. 24.

* * *

EDWARDS RS — Atlas/Centaur static test facilities here operated by GD/Astronautics were included in sights visited during National Engineers' Week.

The Air Force Flight Test Center, of which this installation is a part, held open house for engineers, Feb. 19, and visitors toured facilities.

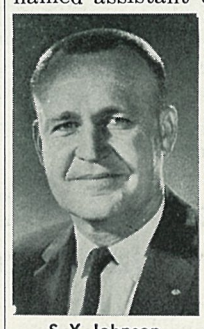
Astro, Convair Post Salvage Schedule

Salvage yard schedule at GD/Convair and GD/Astro for the next four Saturdays is:

GD/Astro—Feb. 23, March 9.
GD/Convair—March 2, 16.

Sam Johnson Bryant Aide

S. Y. Johnson, veteran General Dynamics executive, has been named assistant to E. D. Bryant, vice president—operations, at General Dynamics/Astronautics.



S. Y. Johnson

His basic responsibility will lie in the area of advance facilities planning.

A native of Idaho, Johnson was educated in California, receiving bachelor and master's degrees in civil and structural engineering from California Institute of Technology.

He also holds a master's degree from Harvard Graduate School of Business Administration, where he served for a time as instructor.

During World War II, Johnson served in the U. S. Navy, attaining the rank of lieutenant commander.

Johnson joined Convair's Vultee Field Division in 1946 as staff assistant, and was later division budget administrator.

From 1946 until 1961 he held posts in budget administration with Convair and former Convair General Office, and served both as executive assistant to the president, and director of facilities planning.

Journal Publishes Article on Value

A comprehensive description of GD/Convair's value control program is featured in the 1962 fall issue of the San Diego State College Journal of Business.

Authored by H. P. Williams, GD/Convair manager of value control, the article is titled, "Value Control — New Tool for Management."

REBECCA SPARLING WILL BE SPEAKER

General Dynamics/Pomona's Rebecca Sparling, design specialist, will present a paper entitled "Metallurgy in the Space Age" at a meeting of San Gabriel Valley Chapter, SAMPE, Feb. 25.

Sports & Recreation

CRA Aeromodeler to Compete In Series of Championships

An expert CRA Aeromodeler is heading toward national and, hopefully, international competition with his meticulously designed and constructed flying models.

Nat Antonioli of GD/Convair Dept. 6 traveled to Phoenix, Ariz., last weekend (Feb. 16-17) to attempt to match his last year's accomplishment when he took a first in the Southwest Championships with his towline Nordic glider.

This year he entered four events—the ½A gas, A gas, Nordic glider, hand-launched glider. Entries must make three perfect official flights of five minutes each to qualify for the final sudden-death fly-off, which decides winners.

Antonioli's Orbitneer, with 48-inch wing span, was to be entered in both gas engine events, with change of engine. The same plane set a record duration time in national competition a couple of years ago.

Another of Antonioli's gas models received the coveted Testor Co. trophy for best-finished and best-constructed model in the "beauty contest," also about two years ago, justifying the many hours of work he puts in on his models.

Later this summer — in July — he will go to Los Alamitos to compete in the National Championships, held on the West Coast for the first time in four years. In fact, said Antonioli, the Southwest competition, which draws entrants from as many as 20 states, is a proving ground for the nationals and a good place to discover weaknesses in models and owners before going up against the stiff competition of country-wide events.

If all goes well, Antonioli hopes to weather elimination contests during the next few months to establish his eligibility for the finals which will decide the international team this fall.



GETTING SET—Nat Antonioli puts final touches on his original-design flying model, renovated for entry in Southwest Championships last weekend.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions each Saturday, 7 a.m. to 1 p.m., Clairemont Mesa flying site.

BASKETBALL — Shop league tourney play Tuesday nights, Muni Gym, Balboa Park.

BOWLING—Registration open for CRA plant championship tourney. Entry blanks available at bowling alleys or CRA office, Bldg. 32, Plant 1.

BRIDGE CLUB—Weekly sessions each Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master Points night Feb. 27.

COIN CLUB—Meeting tomorrow (Feb. 21), 7:30 p.m., Convair executive dining room.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GOLF — Entries open Feb. 21-March 1 for CRA tourney at Coronado course, March 9-10. Call ext. 1705 for starting times.

GUN CLUB—Regular monthly shoot March 3, Gillespie Field Range.

ICE SKATING—Big Bear outing, March 8-10. Apply for reservations at employee services before March 1.

JUDO—Instruction and workouts for beginners and intermediates Thursdays, 7:30 p.m., CRA Clubhouse, Pacific Hwy.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children under 12, 20¢.

PISTOL CLUB—Next regular shoot Feb. 24, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow night (Feb. 21), 8 p.m., club headquarters on Harbor Drive.

ROAD RUNNERS — Board meeting tomorrow (Feb. 21), Gillespie Field Clubhouse at 7:30 p.m., followed by open business session and social hour.

SPORTS CAR CLUB—Meeting March 6, 7:30 p.m., main dining room of Convair cafeteria, Pacific Hwy.

STAMP CLUB — Meeting March 7, Convair executive dining room, 7:30 p.m.

TROPICAL FISH CLUB — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Bridge Club Plans Master Points Night

CRA Bridge Club players will hold Master Points night at their next Wednesday session (Feb. 27) in Convair executive dining room, Pacific Hwy., said Frank Westphal, club president.

Playing fees are upped to 50 cents apiece on the monthly Master Points night and play is restricted to General Dynamics people only.

All other weekly sessions throughout the month are open to guests of GD members who must arrange partners. Nominal fee of 25 cents each is levied for regular play, starting at 7:30 p.m., each Wednesday.

Tickets Put on Sale For Fashion Show

Fashion-minded men and women at GD/Convair and GD/Electronics may purchase tickets now at Bldg. 32 employee services for the IRC style show April 3.

"Profiles of Fashions" is theme of the show to be held in Caribbean Room of El Cortez Hotel at 8 p.m. El Cortez Women's and Men's Apparel Shops are furnishing the ensembles. Refreshments and door prizes will be given.

Tickets are priced at $1.25 each.

Coronado Links Next For Golfing Sweeps

Entries open tomorrow (Feb. 21) for the next CRA golf tournament slated for March 9 and 10 on Coronado golf course.

GD/Convair and GD/Electronics golfers may call ext. 1705 for starting times, said CRA Commissioner Ken Wulfemeyer. Deadline date is March 1.

Anglers Earn Button Awards

Two CRA anglers took top trophies for their catches recorded in 1962 in competition with 16,000 sportsmen of Southwest Anglers Button Award Association.

Carl E. Stuart, now with Dept. 756, hauled in the largest albacore, a 42-pounder, for trophy and button award. R. L. Haman, retired from Dept. 31, received a trophy and button award for his 36-lb., 4-oz. blue fin tuna.

Three others received button awards—C. Z. Moore of Dept. 21 for a 48-lb. white sea bass; Guy Hymes, GD/Convair retiree, for a 7-lb., 8-oz. channel cat; and Ted M. Milch of Dept. 986, 11-lb., 11-oz. bonita.

According to CRA Commissioner Bob Menzie, three CRA Fishing Club members still are record holders in the Association. Harvey W. Sass retains top spot for his 58-lb. white sea bass caught in March, 1958, off Coronado Islands. A corbina, weighing 8 lbs., 7 oz., hooked by Joseph Jones in 1954, still tops the list and J. H. O'Neal's 52-lb., 8-oz. yellowtail caught off La Jolla in 1956 has not been equalled.

Fishing club members have voted to hold potluck dinners before their regular third Tuesday business sessions. Dinner time is 6:30 p.m. at Gillespie Field Clubhouse.

Reiter Again Leads Golfers

Al Reiter did it again, topping CRA linksmen for the fourth time in succession as he shot first low gross with a 78 in the Feb. 9-10 tourney at Bonita Valley Country Club.

Emmett Williams stroked an 80 for second low gross in the 0-14 flight.

First low net score was held by Jerry Swarts (Dept. 48) with a 72. E. Henderson of GD/E and Gene Pollpeter of Dept. 31 tied for second low net with 73s.

In the 15-19 flight, Bill McCarthy of Dept. 6 had first low gross, 82, leading Bob Fagan (Dept. 6), who shot 88 for second.

Bill Whitely (Dept. 6) was first low net scorer with 67 and Curt James, also Dept. 6, second with a score of 73.

In the 20-and-over flight L. Majel of Dept. 171 had a 95 for first low gross. Another tie between Charles Lent of Dept. 42 and George Nichols (Dept. 6) with 98s divided second low gross honors.

John Wood (Dept. 14) was first low net with 68; Ralph Emerson (Dept. 15), second, with 73.

'Family Driver' Braves Rain To Win 'Seat of Pants' Rally

A hundred cars wound over 100 miles of San Diego backcountry roads on a rainy Sunday afternoon (Feb. 10) in GD/Convair Sports Car Club's sixth annual "Seat of the Pants" rally.

Tom Kienholz of Dept. 6, accompanied by his wife and children in the family car, took first place in the Convair Class, restricted to GD/Convair, GD/Electronics, GD/Astro drivers.

Second prize for Convair Class entries went to Frank Radig of Astro and Evie Paulson.

Open Class was won by Dean Fisk and Naja Leitch from the South Bay Sports Car Club.

Drivers were required to keep to a set time schedule, navigating by the "seat of their pants," over a course from Grossmont Shopping Center, through Spring Valley and Bonita, to Fletcher Hills Country Club near Gillespie Field. Running time was about 3½ hours with a half hour out for lunch at Bonita.

Weather and Sabin-on-Sunday threw two hitches into the well-laid planning of Sid Weiner (Dept. 27-5), who with his wife and son started last December to lay out the rally course.

One leg was eliminated entirely when the road was flooded out by a blocked culvert. Another section of the route was redirected to bypass crowded streets around a school where Sabin sips were given.

Rallymaster Chase Allen (Dept. 500) credited the fine volunteer efforts of ARA and CRA Radio Club members who donated use of their radio cars in enabling him to keep close control over changing conditions. Several other radio-equipped cars cruising the area joined in answer to a radioed invitation.

Using the radios, Allen was able to instruct check point crews how to change course instructions to eliminate possible hazards. Captaining the crews manning the five check points were Hank Callihan, Spud Riggs, CRA Commissioner Gerry Wright, all Dept. 6, Lou Barnes and Jim Hamill of GD/E.

Next club event will be a CRA rally at Grossmont Shopping Center some time in March.

Regular meeting of the Sports Car Club will be March 6 in the main dining room of Convair cafeteria at 7:30 p.m.

Variety of Exchange Tickets Offered to GD/E, Convair Folk

Special exchange tickets to recreational facilities in the San Diego area now available at GD/Convair employee services include:

Sportfishing exchange coupons allowing $1 discount for half-day trips from Seaforth Landing, 1641 Quivira Rd., and Mission Bay Sportfishing, 1551 Ventura Blvd. Reduced price is $4.50.

Discount tickets to Frontier Town, Big Oak Ranch, off Dehesa Rd., adults, 50¢; children, under 12, 35¢.

Invitation Dinners, Inc., applications for dinners, movie and theater tickets, two for price of one, at special membership price of $5.50 to General Dynamics people.

Disneyland's Magic Kingdom Club memberships entitling holders to reduced prices.

Free tickets to Caliente horse races and greyhound racing; jai alai at Tijuana Fronton Palace.



"What makes you think I'll have trouble mastering the game?"

'Thirty-Niners' Lead Hoop Play

"Thirty-niners" were leading the second round of CRA "slow break" basketball play with three wins in a row after barely snatching a close one from Rose Canyon Feb. 12.

Rose Canyon boys were doing their best to keep their undefeated record clean but couldn't quite match the strong Thirty-niner performance. A missed free throw in the last few seconds was the only chance Rose Canyon had to tie the score which came out 39-37.

So far, in second-half tilts Thirty-niners have won their games with GD/E and Hi-Lows, as well as Rose Canyon. They were to have a bye last night. Rose Canyon downed Electronics in the opener, went on to defeat GD/E the next Tuesday.

In the other Feb. 12 game Electronics came out ahead of Hi-Lows, 36-18.

Next week's games will finish second-round play with Hi-Lows meeting GD/E and Thirty-niners taking on Electronics.

GD/E and Electronics will play off for first-half title at 7:55 p.m., March 5. Championship match between first and second round winners is set for the following week on March 12.

Competition Stiff In Pistol Shooting

Joe Williamson and Verne Mardis put on a seesaw act at CRA Pistol Club's Feb. 10 matches as they vied for top spots in both Police Course and Short National events.

Mardis (Dept. 34) emerged winner of the Police Course by virtue of his 12 bull's-eyes, barely outpacing Williamson's (Dept. 401) nine. Both shot 290s.

Jim Halfacre (Dept. 140) was a close third with 289.

In the center fire Short National Williamson switched standings, taking first with 257. Mardis came out second with 253; in third was W. G. Walker (Dept. 6), 238.

CRA pistoleers were to try their luck and skill in the National Industrial Recreation Council matches last Sunday (Feb.17). Regular club matches will take place Feb. 24.

Road Runners Dash For Cover as Rain Splatters Weekend

Rain drove CRA Road Runners indoors on their Feb. 8-10 desert outing.

The usual Saturday night potluck supper and campfire gathering was rained out during the trailer group's trip to Split Mountain in the Anza-Borrego Desert State Park. The more than 60 people were served from the back of a van, then dashed for shelter in their own trailers.

Several teen-agers and stalwart adults braved the threatening weather Sunday to explore nearby desert scenic spots and an abandoned mine, riding motor bikes and sand buggies.

Guests of the club during the weekend were the Carl Scholl and Robert Kramer families.

Members will hold their postponed business meeting tomorrow evening (Feb. 21) after the regular 7:30 p.m. board meeting at Gillespie Field Clubhouse. A social hour will follow.

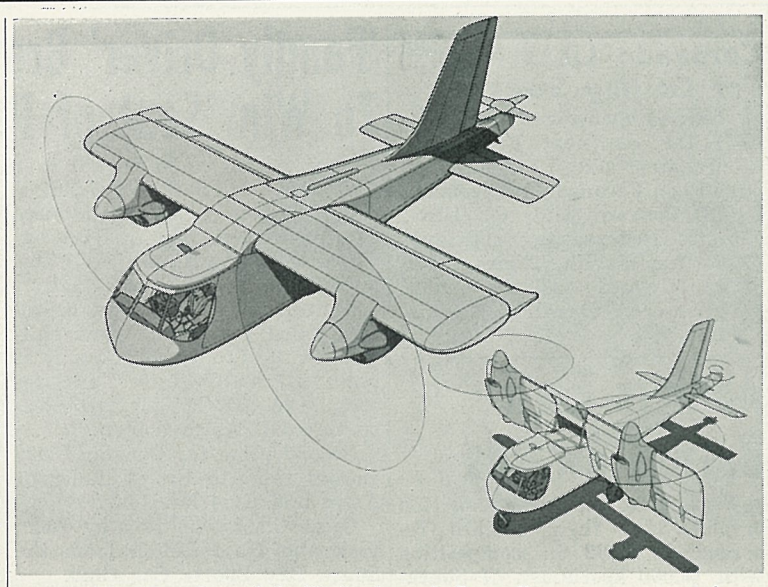
Plans are now being laid for a joint outing in March with the Douglas Jetliners Trailer Club of Long Beach.

Vertical Climb Plane Designed By Canadair Ltd.

Details of a new type of twin-engined transport aircraft that can take off and land vertically, hover like a helicopter and also fly at 350 miles an hour, have been revealed by Canadair Limited of Montreal.

Research on the new aircraft, called the CL-84, began six years years ago and has been financed jointly by Canadair, the Canadian Defence Research Board and the Department of Defence Production. Canadair and the Canadian Government have now undertaken to go ahead together with further engineering work, and the development and construction of two prototypes to prove out the concept of vertical takeoff and establish effectiveness of this particular design. Total cost of the program will be $10 million, of which Canadair will invest $2.5 million dollars and the Canadian Government the remaining $7.5 million. It is hoped that the project will eventually win production orders in world markets.

The aircraft has both short-run and vertical takeoff capabilities and is designed to perform a variety of specialized roles for both military and commercial purposes.



VERSATILE—Canadair Limited and Canadian government have undertaken go-ahead on prototypes of new CL-84, designed for vertical takeoff. Once aloft, wing swings to position for normal flight.

For vertical takeoff without the use of any runway, the CL-84's wing, complete with engines and propellers, swings through 90 degrees from the conventional position until it points upward. The aircraft then literally lifts itself straight off the ground by its propeller thrust alone, making no use of the wing for lift purposes. Once aloft, the wing swings down again to the normal forward-flight position. Vertical landing is achieved by reversing the sequence.

Under conditions where vertical takeoff is not essential, the wing of the versatile CL-84 can be set mid-way between the horizontal and the vertical to allow the aircraft to operate from very short, unimproved airstrips and carry even greater payloads.

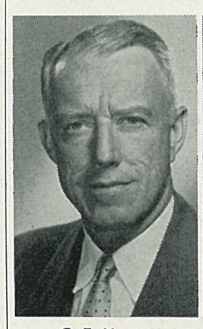
For commercial purposes, the CL-84 is well-suited to short-haul passenger transport between city centers or in undeveloped areas such as the Canadian North, for surveying and prospecting, and for "flying doctor" services.

Horne and Hicks National VPs Of Value Engineers Society

C. F. Horne, president of General Dynamics/Pomona and currently president of the Electronic Industries Association, has been named a vice president of the Society of American Value Engineers (SAVE).

SAVE president is Anthony R. Tocco, manager, value engineering, Space Technology Laboratories, Redondo Beach, Calif.

Serving with Horne are: Thomas D. Morris, Assistant Secretary of Defense, Washington, D. C.; George T. Willey, vice president and general manager, Martin, Orlando, Fla.; Marion L. Hicks, vice president, General Dynamics/Fort Worth; Dean Albert Everett, Northeastern University, Boston, Mass.; and William M. Allen, president, Boeing Co., Seattle.



C. F. Horne



M. L. Hicks

Technical Papers Deadline Nearing

General Dynamics people interested in submitting papers for the technical program of the 1963 Western Electronic Show and Convention are reminded that April 15 is closing date.

Three copies each of abstracts of 100 to 200 words and summaries of 500 to 1,000 words indicating related work and new contributions must be sent to the committee before that date. Military and company clearance must be made in advance.

Authors are asked to send material to Dr. Jerre D. Noe, WESCON technical program chairman, Suite 2210, 701 Welch Road, Palo Alto, Calif.

The convention will be held Aug. 20-23 at San Francisco.

GD/E Contractor On Radio For Combat Jeeps

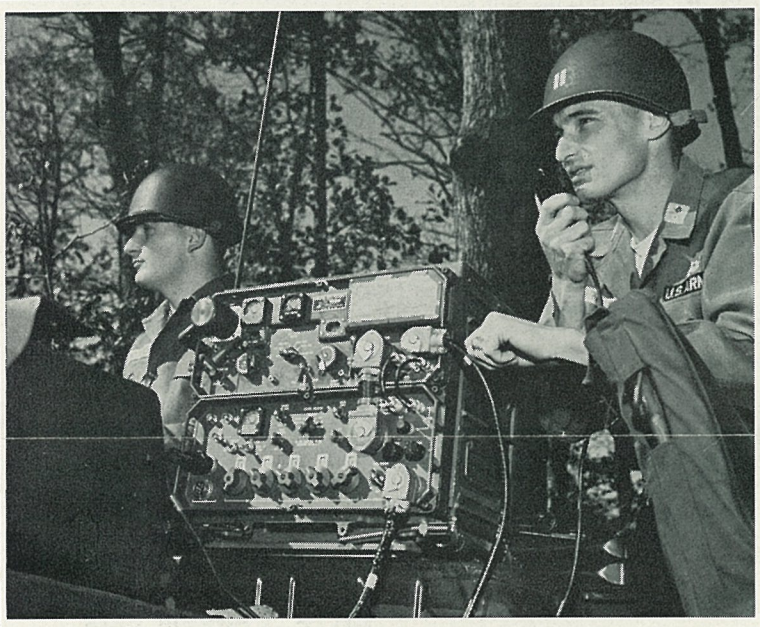
The Army has announced development and testing of an ultra-rugged lightweight jeep radio that greatly improves long-range combat communications between U. S. ground forces.

The two-way transistorized set, called "Angry-106" (from its official designation AN/GRC-106), is the first Army jeep radio to provide dependable 50-mile voice communications even over severe terrain obstructions. Under favorable conditions, its signal can easily reach a much greater distance.

The 100-pound radio is half the size and weight of the set it replaces, yet through use of advanced single sideband circuitry it provides ten times the effective signal power and twice the range.

"Angry-106" was completed in two years under a high priority test and development program by the U. S. Army Electronics Research and Development Laboratory, Fort Monmouth, N. J., and its contractor, General Dynamics/Electronics of Rochester, N. Y. This is half the time usually required for such a development.

In operation, the new radio provides initial long-distance communications when ground forces enter a new area, and enables a commander to maintain radio contact with widely dispersed forces in a fluid combat area, even while the "Angry-106" jeep is in motion.



"ANGRY" JEEP—Capt. Carl Herrmann operates newly-developed Army jeep radio (called "Angry-106") capable of distances up to 50 miles. Contractor is General Dynamics/Electronics-Rochester, N.Y.

The new radio has been put through rigorous tests in simulated combat. It operated perfectly after two airdrops, more than 3,000 miles of road tests, and standard laboratory shock and vibration tests. In heat, dust, and rain it also proved superior to other sets of comparable size and weight.

GD/Electric Boat Wins Contract For Study Of Decision Making in Combat Situations

A contract to study the most effective means of training men to make decisions in combat situations has been awarded to General Dynamics/Electric Boat, Groton, Conn.

The study will be performed by the human factors section of the Robinson Research Laboratory for the U. S. Naval Training Device Center, Port Washington, N. Y.

Special emphasis will be placed on anti-submarine and anti-aircraft warfare as well as air early warning situations. A principal part of the study will involve the Submarine Tactics Analysis and Gaming (SUBTAG) device developed by Electric Boat.

This device duplicates a number of combat situations and provides an opportunity to test individual decision-making skills under controlled laboratory conditions.

Simple System Found To Produce Flat Parts

A simple, inexpensive method of producing flat metal parts has been put into effect at General Dynamics/Convair after several years of development in the division's own sheet metal department.

Since 1958, when metal blanks (any flat part of irregular shape) were subcontracted to outside manufacturers, H. A. Mohr and H. M. Woodard, both Dept. 101, have been working on an inexpensive and satisfactory means of making such parts in-plant.

Their efforts over the years have resulted in blanking procedures which produce most aluminum, titanium, stainless steel flat parts at a fraction of the cost formerly spent in outside procurement. Complete records kept over the last year on 1,200 jobs substantiate their claims that clean, uniform, and high quality blanks can be made within the division at as much as a tenth of the former cost.

Too, in emergencies — and emergencies become routine in many programs — parts can be turned out in a matter of two or three hours. Fastest time from order to delivery from outside companies is five days!

As an example, Mohr cites one case when a rush order came through for a quantity lot of a certain F-106 spare part. There was no time to get them from outside the plant. He and his crew of experts went into action, stamping out 258 perfect parts in 3½ hours. Since then, 1,600 of the same part number have been blanked.

Now on hand are 1,300 different tools for blanking of commercial and military spare parts to provide customers with the fastest service possible. These tools can be used over and over indefinitely, turning out sharp, true shapes in metal.

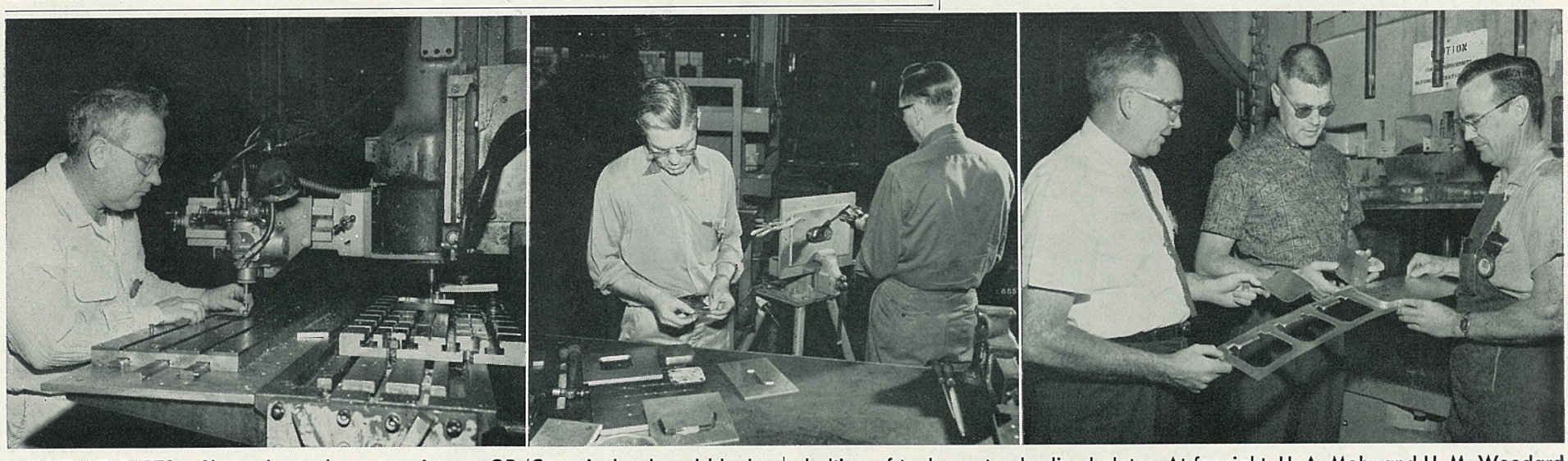
Another advantage of the new blanking method, besides its speed and accuracy, is that parts can be stamped out in multiples — at present, it is not uncommon to blank three at a time for urgent jobs, and as many as 10 different jobs can be shaped at once, depending on size and shape of parts and dimensions of the mass as a whole.

Mohr and Woodard credit the ingenuity of at least half a dozen Dept. 101 sheet metal machinists for devoting many months of work and trial and error in perfecting mechanical details of the new method now installed as accepted division procedure.

GD/Convair low-cost blanking facilities also are available now to other divisions within the General Dynamics family.



VARIETY — H. M. Woodard displays many sizes and shapes of flat metal parts blanked perfectly by GD/Convair method.



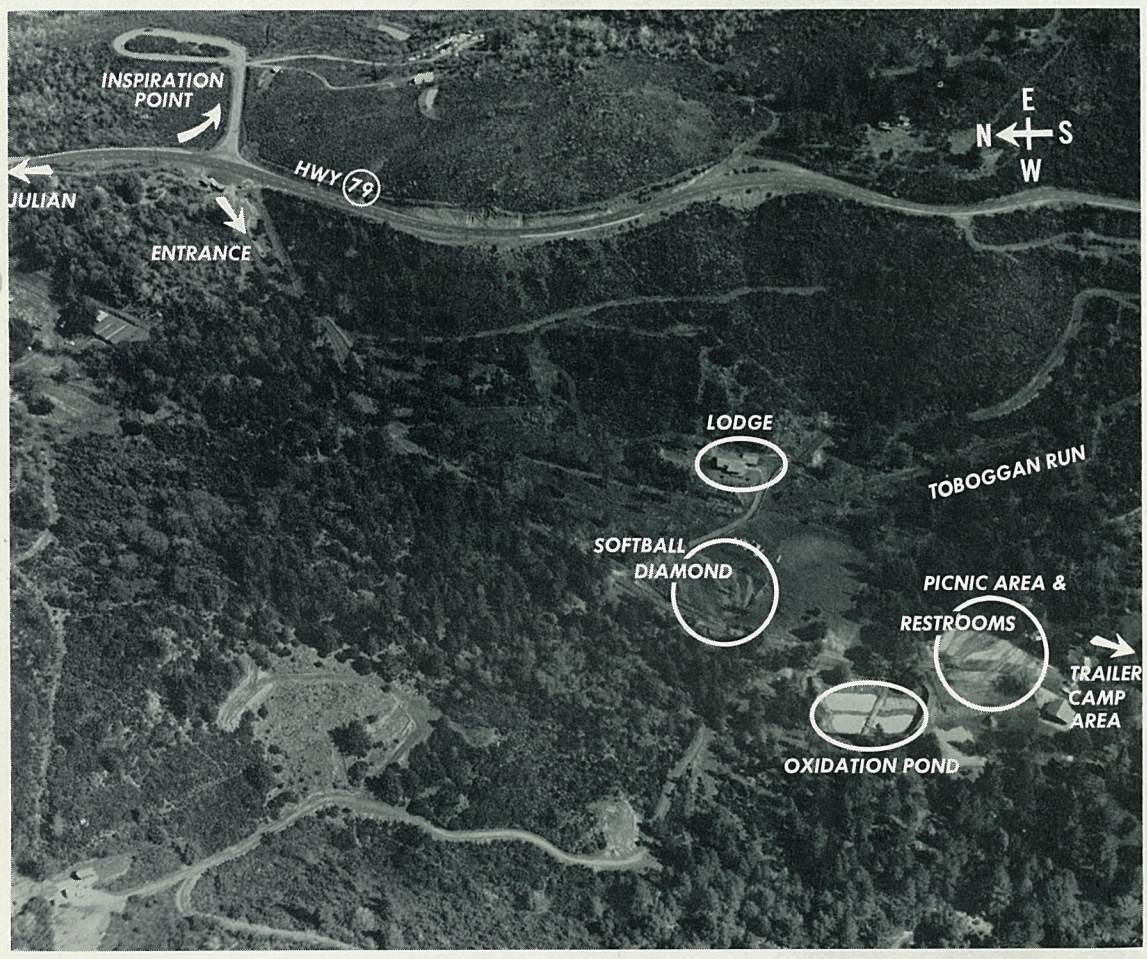
INSTANT PARTS—Shots above show steps in new GD/Convair-developed blanking procedures, now cutting costs to fraction of old methods: (at left) A. L. Davis of Dept. 101 traces blanking tool on True-Trace milling machine; (center) C. E. Alexander shapes corners of die for perfect fit while C. R. Thompson taps holes for bolting of tools on standardized plates. At far right, H. A. Mohr and H. M. Woodard examine completed flat parts stamped from metal sheet held by Clint A. Wilson, punch press operator. Mohr and Woodard headed team which spent months of effort in development of low-cost blanking.

GD

SAN DIEGO EDITION

GENERAL DYNAMICS NEWS

Vol. 16, No. 5 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | 52 | Wednesday, March 6, 1963



MOUNTAIN RETREAT—Above is aerial view of CRA's newest development, 90-acre Pine Crest recreation area some 50 miles east of San Diego, where GD/Convair and GD/E people can "get away from it all" among pines and oaks. Annotations point out picnic, camping facilities, softball diamond and lodge now available for use of CRA groups.

NASA Certifies Trio For GD/E

General Dynamics/Electronics—San Diego now has two expert electronic assemblers and a GD/E soldering instructor certified to NASA specifications as first in a program which ultimately will include all GD/E production workers, inspectors, and supervisors.

R. A. Davis, quality control engineer, has been certified as a NASA instructor in soldering and assembly techniques at the West Coast training center and now will be qualified to grade and evaluate GD/E students in-plant before final NASA certification.

Willadean Ellis and Margaret Hunt, both qualified GD/Electronics assemblers before they were chosen to go through the advanced NASA soldering course, were first from GD/Electronics to receive full NASA certification. Mrs. Ellis has instructed in GD/E soldering classes and Mrs. Hunt is lead lady in REINS electronic assembly.

According to H. D. Palmer,

(Continued on Page 2)

Pine Crest Resort Open To GD/Convair, GD/E Folk

Lure of the great outdoors will be drawing GD/Convair and GD/Electronics families to the seclusion of their own mountain resort now open for picnicking and weekend camping.

Pine Crest, the 90-some acre mountain tract purchased by Convair Recreation Association in early 1961, is well enough developed for full use during the coming spring and summer months, said J. K. Field, manager of personnel services.

The CRA area on Route 79, between Julian and Cuyamaca directly across the highway from Inspiration Point, has been leveled for picnicking and trailer camping and a lodge built for supervised gatherings.

Water and restroom facilities are located near the picnic and camp grounds. Tables and barbecues are spotted under the pines and oaks. Play equipment will be supplied.

There is no charge whatsoever for picnicking groups, but a nominal fee of 50 cents a night for each vehicle is levied for use of camping spaces.

The lodge, with electrically-equipped kitchen, fireplace, dining area, is opened only for CRA-sponsored activities with club commissioners responsible for its use.

In the near future a guard will be on duty full-time at the park's entrance to check ID cards for eligibility of everyone entering Pine Crest.

The road leading into the main recreation area has been oiled so there is no risk of cars bogging down in snow or mud. Other roads and trails have been cut through Pine Crest for hiking or rough driving. One leads to the highest point for a panoramic view which extends westward to the ocean on clear days.

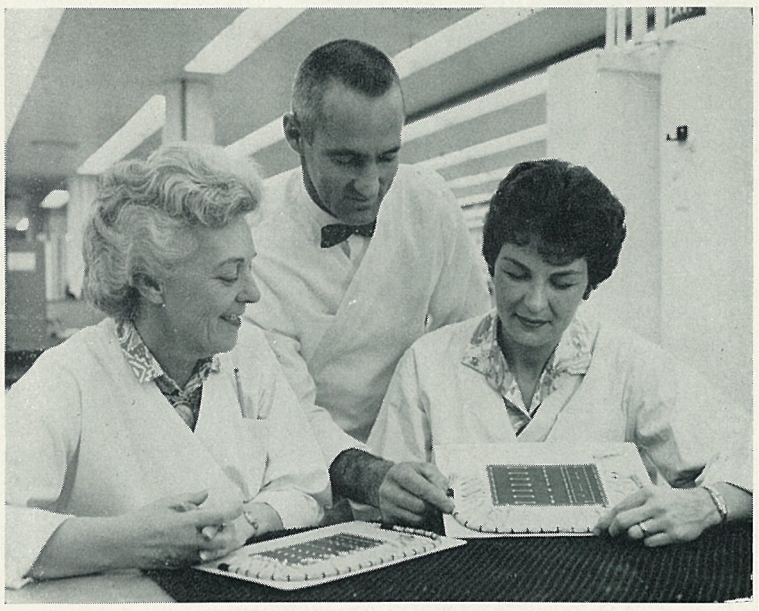
A softball diamond has been laid out near the lodge and a toboggan slide graded nearby—although there is little chance of enough snowfall this season to put it into use, said Field.

Future plans may see permanent campsites, with water and electricity hook-ups, located throughout the tree-covered resort. Eventually, a swimming pool may be put in, and a chapel built near the entrance, overlooking Inspiration Point to the east.

For GD/Convair and GD/Electronics people who prefer to stay closer to home, Pecan Park, 8 miles east of El Cajon, is open for family and group picnics Tuesdays through Sundays, 9:30 a.m. to 9:30 p.m.

This year, the CRA picnic spot is available to outside groups at reasonable charge, depending upon number of people, announced

(Continued on Page 2)



CERTIFIED—GD/Electronics assemblers Margaret Hunt and Willadean Ellis show R. A. Davis, quality control engineer, sample circuit boards which gained them NASA certification. Davis has been certified as NASA instructor in soldering and assembly techniques.

GD/Convair Visitors Check in at Bldg. 1

All visitors to General Dynamics/Convair must now check in at Bldg. 1 lobby for processing.

Location of visitor control has been moved to Bldg. 1 from Bldg. 19. Phone extensions are 2921 and 2951.

Missile Launch Dept. Activated

Acitvation of a new department (Dept. 311) at General Dynamics/Convair becomes effective this month for Little Joe II launch operations at White Sands Missile Range with assignment of the first Dept. 311 individual.

J. S. Boaz, former chief of material and manufacturing control at Holloman AFB, N. M., will assume title of site administrator March 11. He leaves this week for the White Sands, N. M., range to prepare the way for future launch operations personnel.

Boaz reports directly to H. K. Cheney, Little Joe II deputy program manager with launch operations responsibility, as will Owen L. Todd in charge of operations support; W. E. Covington, quality control; A. W. Kellogg, operations engineering.

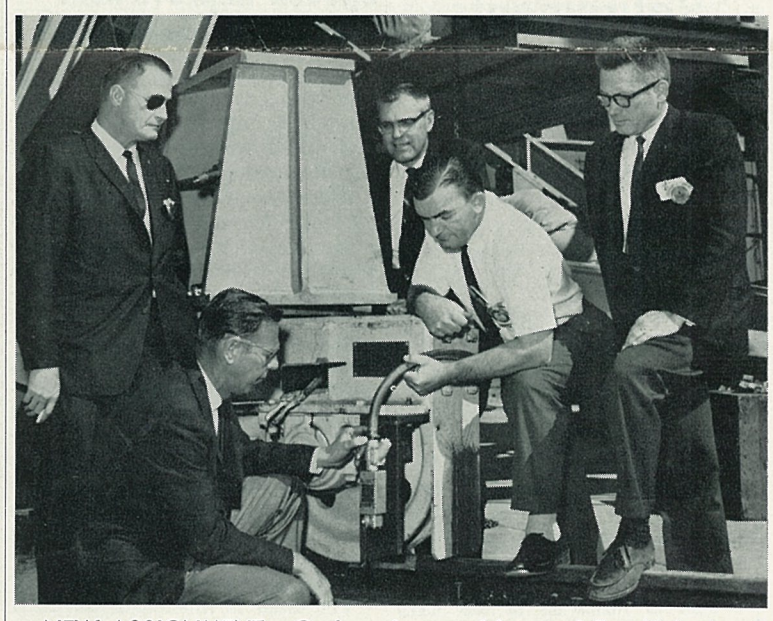
Covington and Todd, another recruit from Holloman where he was chief of field operations during F-106 test operations, will join Boaz at the desert site some time before the end of April. Cheney and Kellogg will spend most of their time during the next few months commuting between San Diego and New Mexico as the facility is readied for Little Joe II firings.

Dept. 311 will build up to a peak of 30 engineers and technicians by the first of May, said Cheney.

Initial construction work at the National Aeronautics and Space Administration's former Redstone facility started in January under supervision of the Army Corps of Engineers. Site expansion and new installations will comply with NASA, GD/Convair, and North American Aviation specifications. North American, Apollo spacecraft contractor, will conduct Apollo pad abort tests at the same location while GD/Convair will be firing Little Joe II launch vehicles, designed to launch Apollo spacecraft for in-flight abort tests.

A new 100 x 150-ft. concrete launch pad will be built 1,100 feet from the existing blockhouse, which, with the present gantry tracks, will be retained. New launcher rails for the GD/Convair-built Little Joe II launcher and electrical connections for operation of the launcher will be installed.

First Little Joe II launcher will be assembled in Plant 1 experimental yard this month for checkout before it is shipped in sections to White Sands by mid-April. There it will be reassembled on site in preparation for first firing this summer.



NEW ASSIGNMENT—Gathered around base of first Little Joe II launcher going up at GD/Convair are first men assigned to administration of new launch operations department (Dept. 311): A. W. Kellogg, O. L. Todd, J. S. Boaz, site administrator, W. E. Covington, H. K. Cheney, Little Joe II deputy program manager—launch operations.

Additional $330,000 Order Received For Minuteman Units

General Dynamics/Convair has received a $330,000 follow-on order to produce guidance housing assemblies for the Minuteman missile.

The order was placed by the Space and Information Systems Division of North American Aviation, which is doing the work for the company's Autonetics Division. Autonetics produced the guidance and control equipment for the Air Force's Minuteman ICBM as associate prime contractor on the program.

GD/Convair received an initial $135,000 purchase order to fabricate 39 Minuteman guidance housing assemblies in March of 1962. Follow-on order is for 111 assemblies.

The guidance housing assembly is cone-shaped, about three and one-half feet in diameter and three feet high. Its structure is aluminum skin wrapped around two forged rings. The cone is coated with a resin-impregnated cloth and cured. The part, which must be able to withstand sudden shocks of high temperature, is tested at GD/Convair on a special circular lamp bank that can flash-heat the part to 455 degrees Fahrenheit in 10 seconds.

Convair 880 Sets Unofficial Record

A new, unofficial speed record was set Feb. 26 by a Northeast Airlines Convair 880 on a non-stop flight between Miami and Boston.

Covering the distance in 113 minutes, the plane carried a capacity load of 99 passengers. Operating at an altitude of 33,000 feet, it logged an average ground speed of 725 mph, with a top speed of 775 mph.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period March 1 through March 15.

Thirty-five-year: Dept. 102, Leo Niemet.

Twenty-year: Dept. 3-2, C. K. Evancho; Dept. 6-2, J. B. Harter, Mary C. Todd; Dept. 91-1, E. K. Park; Dept. 101, H. M. Bursch; Dept. 102, Daniel Cervantes; Dept. 140, M. R. Davis.

Fifteen-year: Dept. 6, W. W. Frase, D. L. Hobart; Dept. 14-7, Ruth S. Pearsall; Dept. 101, Amanda D. Stackhouse; Dept. 131, R. S. Mendoza; Dept. 140, Arley Buchanan; Dept. 400-3, R. D. Nowka, O. A. Wahlsten.

Ten-year: Dept. 6, J. L. Lull, Doris H. Sohlin, D. R. Walin; Dept. 14-1, R. L. Rivers; Dept. 16-1, F. T. Hunter; Dept. 23-3, J. A. Kooistra; Dept. 25-2, A. H. Dauel, E. B. McMahon; Dept. 43-4, Jean B. Bellingham; Dept. 115, C. Z. Forman, L. D. Gaines.

ADVANCED PRODUCTS

Ten-year: Dept. 986-1, M. J. Gallagher.

GD/ELECTRONICS

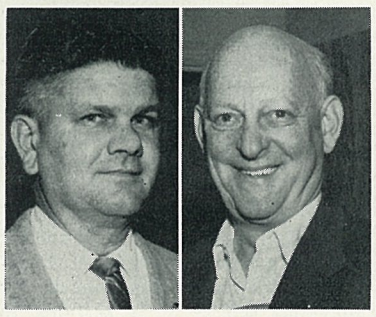
Twenty-year: Dept. 33-00, T. R. Fowler, F. A. Klukas.

Fifteen-year: Dept. 34-00, C. G. Franklin; Dept. 72-00, J. R. Skimin.

Ten-year: Dept. 71-00, W. N. Marti, J. M. Montoya; Dept. 72-00, R. W. Lamplugh.



John Doig, GD/Convair veteran of 30 years, recently received congratulations and appropriate service emblem from President J. H. Famme.



Wearing new GD/Convair 25-year service emblems are W. T. Aleckner Jr., Dept. 171 (left) and W. H. Poschman, Dept. 401-4.

Retirements

CONVAIR

GROVE—Florence A., Dept. 400-6. Seniority date Feb. 20, 1952, retirement effective July 30, 1962.

HARVEY—Ada H., Dept. 400. Seniority date Oct. 12, 1950, retirement effective Feb. 15, 1963.

JONES—Linnie F., Dept. 215. Seniority date Jan. 4, 1952, retirement effective Feb. 13, 1963.

MOHR—Robert B., Dept. 143. Seniority date Nov. 16, 1950, retirement effective Dec. 15, 1962.

ROGERS—Hunter A., Dept. 136. Seniority date Jan. 31, 1952, retirement effective Dec. 13, 1962.

THOMPSON—James E., Dept. 21. Seniority date Jan. 11, 1951, retirement effective Feb. 14, 1963.

WEEMS—Clarence B., Dept. 133. Seniority date Oct. 28, 1947, retirement effective Feb. 22, 1963.

Personals

CONVAIR

We wish to express our sincere thanks to Convair friends for the kind and thoughtful expressions of sympathy at the death of W. I. Miller, Dept. 97-2.

Mrs. Bill Miller and daughter, Marilyn.

* * *

I wish to thank all of our many friends at GD/Convair Plant 1, GD/Convair Rose Canyon, and GD/Astronautics for all the beautiful cards and flowers and so many kindnesses during the illness and death of my husband, Cecil Russell.

Juanita Russell, Inv. Records, Rose Canyon Facility.

Lost & Found

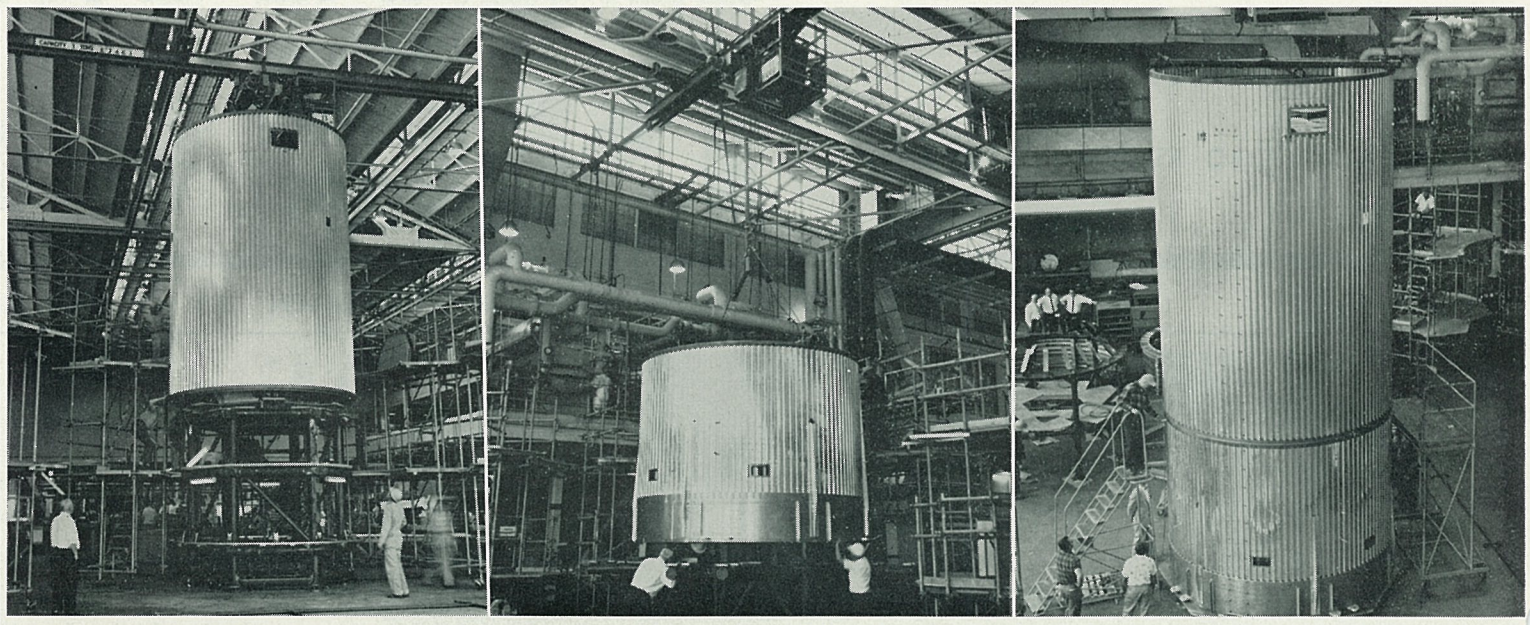
CONVAIR

FOUND—Expensive, man's umbrella in Bldg. 19 parking lot. Phone Plant 1 ext. 2083.

Deaths

CONVAIR

BROWN—Harvey A., Dept. 6. Died Feb. 21. Survived by wife, Vergeline; daughter; parents; two sisters.



UP AND OUT—Major assemblies of first Little Joe II launch vehicle are hoisted out of fixtures in GD/Convair experimental during initial mating Feb. 22. Forebody (far left), some 30 ft. high, clears fixture by inches as it is lifted off as first step in process. Center shot shows completed aftbody. Both corrugated aluminum sections are joined (at far right) for mating check.

Pine Crest Resort Open

(Continued from Page 1)

Field. Full information may be obtained by calling ext. 1245, Plant 1.

A wide variety of game equipment, such as softballs, bats, volleyballs, basketballs, shuffleboards, horseshoes, can be checked out and play apparatus is set up for youngsters. The permanent dance floor, with record player and loud speaker, has proved popular.

During weekends a snack bar offers soft drinks, beer, candy, and ice cream.

Large department affairs should be registered at CRA office, but individuals and family parties from GD/Convair and GD/Electronics are welcome to use the Pecan Park facilities at any time.

Speech Improvement Course Proposed

A speech class, pointed especially to needs of supervisory personnel, is open to GD/Convair and GD/Electronics members of the Management Club.

The class, which will be taught by E. Kingsley Povenmire, speech arts professor at San Diego State College, has been arranged through joint efforts of the Management Club and GD/Convair educational services.

Entire course of 10 meetings, once a week, costs $20 per member with the club refunding $10 to those completing the course satisfactorily. Goal is to assist administrators to better use skills of oral communication and speech composition in such situations as contract conferences and community audiences.

The class is limited to the first 15 members who sign and pay the fee. Larry Sweeney now is accepting applications. He may be reached on ext. 1687, Plant 1, or mail zone 42-51.

Rider-Driver

GD/ELECTRONICS

RIDE WANTED—From 4200 block of Clairemont Drive to Plant 1, either 7:30 a.m. to 4 p.m. or 8 a.m. to 4:30 p.m. Betty Cherlin, ext. 1660 or home phone 273-3431.

CONVAIR

RIDE WANTED—From Fletcher Hills to Plant 1, 7 a.m. to 3:30 p.m. W. L. Dueber, ext. 1200, or home phone 466-8865.

GD/E Will Administer Its Own ES and CIP Program in Future

A separate Employee Suggestion and Cost Improvement Proposal program has been set up solely for General Dynamics/Electronics division at San Diego.

Hereafter, GD/Electronics will administer its own cost improvement program through systems and procedures department, announced J. E. Rutledge, manager of systems and procedures. Since



IDEA BOX — Juliet Allen of GD/Electronics Plant 2 electronic assembly examines contents of ES/CIP boxes now installed in GD/E facilities.

organization of the GD/E division at San Diego, all of its ESs and CIPs have been handled through GD/Convair's cost reduction section.

G. F. Belgum of GD/E systems and procedures will be directly in charge of GD/Electronics ES and CIP activities for both Plant 1 and Plant 2 (Hancock St. facility).

SPI (Standard Practice Instruction), outlining procedures is now being formulated for distribution to all supervisors within the next few days.

Six ES and CIP boxes, containing forms and mailing envelopes, have been spotted in convenient locations throughout both plants. One is in Bldg. 4 fabrication area; two on ground floor of Bldg. 51; one on the second floor of Bldg. 51; and two at Plant 2. All have been attached to walls near vending machine centers in all locations.

One simplified form will be used for either ES or CIP ideas. The forms are to be filled out in pencil to expedite processing. Pencil-written copies may be duplicated more quickly and economically and copies sent immediately to supervisors aiding in evaluation. Processing will be handled as speedily as possible, promised Belgum.

Besides the forms, boxes contain addressed envelopes for mailing. Suggestions, dropped in the in-plant mail, will go directly to GD/E systems and procedures. List of awards will be posted on the boxes every other week.

Standard General Dynamics award procedures apply to GD/Electronics' newly-installed program.

Generally, ES awards amount to 10 per cent of the total first year's savings, in the $100 and $10,000 (maximum) range. Minimum award of $10 is given for all ESs saving between $50 and $100. A $10 minimum award goes for Employee Suggestions involving intangible benefits or safety, methods, or quality improvement. CIPs receive no cash recognition.

All GD/Electronics employees are urged to put on their thinking caps for ways and means to improve costs in any GD/E area. They have a chance to save the division actual dollars and cents in operations costs and earn themselves extra money from worthy suggestions.

San Francisco To Get 990s

Convair-built 990 and 990A jetliners will be serving the West Coast with the addition of San Francisco to American Airlines' 990 routes this Sunday, March 10.

Beginning this weekend, all four of American's daily nonstop flights in each direction between San Francisco and Chicago will be 990s. Some of the flights also will link San Francisco with direct one-stop service to and from Detroit, Boston, and from Cincinnati.

Since 990s joined American's fleet a year ago, they have operated for the most part in the Eastern section of the country, and, according to American officials, have been the most popular aircraft from passengers' standpoint. Operating over highly competitive routes, American's 990s have had a higher percentage of seats occupied than any other type airliner in the company's fleet.

Electronics Wives To Meet March 14

A smorgasbord luncheon has been arranged for GD/Electronics wives at the March 14 GD/E Wives' Club gathering at Shelter Island Inn.

Cocktail hour will be at 12:30 p.m. with luncheon at 1 p.m. Cost will be $2.10, including tax and tip, for each lady.

All reservations should be called in to Marjorie Siebenaler by March 12 at her home phone, 262-1189.

GD/Electronics Trio Certified by NASA

(Continued from Page 1)

GD/E electronic assembly foreman responsible for training in the assembly area, these three form a nucleus for follow-on instruction to NASA specifications within the division. Others will be rotated through the continuing NASA course as necessary. All electronic assemblers must be requalified to GD/Electronics requirements, and recertified to NASA specifications wherever applicable, every six months.

Archers to Compete Over Balboa Range

CRA Archery Club members will gather this coming Sunday (March 10) at Balboa Park Field Range for their regular monthly shoot.

Event will consist of 14 elliptical hunter targets and 14 animal picture targets, said CRA Commissioner Al Phipps.

SEMINAR INFORMED ON VALUE ANALYSIS

"Value Analysis—the New Approach" was discussed by H. P. Williams, GD/Convair manager of value control, at morning and afternoon sessions of the eighth annual seminar of San Diego Chapter of American Institute of Industrial Engineers Feb. 22.



HEADED TO "FUN NIGHT"—Red McLaughlin, general chairman of coming Management Club's "Fun Night" (next to driver Les Boring) is surrounded by manufacturing department committeemen, D. E. Palumbo, Frank Blair, Nick Keough, Harry Rote, Lee House, Jack Bryant, Ben McMicken, as they plot gay session at Mickie Finn's on March 13. Food, movies, music, fun promised for 99 cents.

General Dynamics NEWS

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* * *

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Atlas/Centaur Will Launch Strange Looking 'Moon Bug'

Surveyor spacecraft, that Atlas/Centaur will launch for soft-landing on the moon, looks like a space age bug.

Packed with scientific instruments, the craft will view, "feel" and even "chew" the moon's surface, transmitting its secrets back to earth.

Seven Surveyors are now programmed for one-way lunar trips to blaze a trail for future manned voyages. They will be launched by Atlas/Centaur vehicles built by General Dynamics/Astronautics. The Surveyor program mission is threefold: to provide astronauts who will land on the moon with a foreknowledge of conditions essential to their safe landing and return; to develop techniques in control, guidance, communication and landing required for a successful manned voyage; and to obtain basic scientific data about the moon.

The program is a logical forerunner for manned missions and the focal point of National Aeronautics and Space Administration (NASA) plans at present.

It is one of the reasons the nation's highest priority—DX—has been assigned to development of the Centaur vehicle, a task that is occupying GD/Astro's most determined efforts.

Surveyor spacecraft are manufactured by Hughes Aircraft Co. for the Jet Propulsion Laboratory, manager of unmanned lunar exploration for NASA.

Resting atop the Atlas/Centaur launch vehicle, Surveyor will weigh approximately a ton when launched. After Atlas burnout and separation, Centaur engines will ignite and position Centaur in a 100-mile-altitude "parking orbit" for a brief period before striking out on a lunar trajectory. Ultimately, on command, Surveyor will separate from Centaur and continue alone, "navigating" by fixes on the sun and Canopus, one of the brightest stars. After 20 hours of its 66-hour voyage to the moon, Surveyor will be commanded to adjust its flight path by thrust of vernier engines so as to intercept the moon. Retrorocket power will slow the spacecraft to about 6 mph for the descent to the moon's surface.

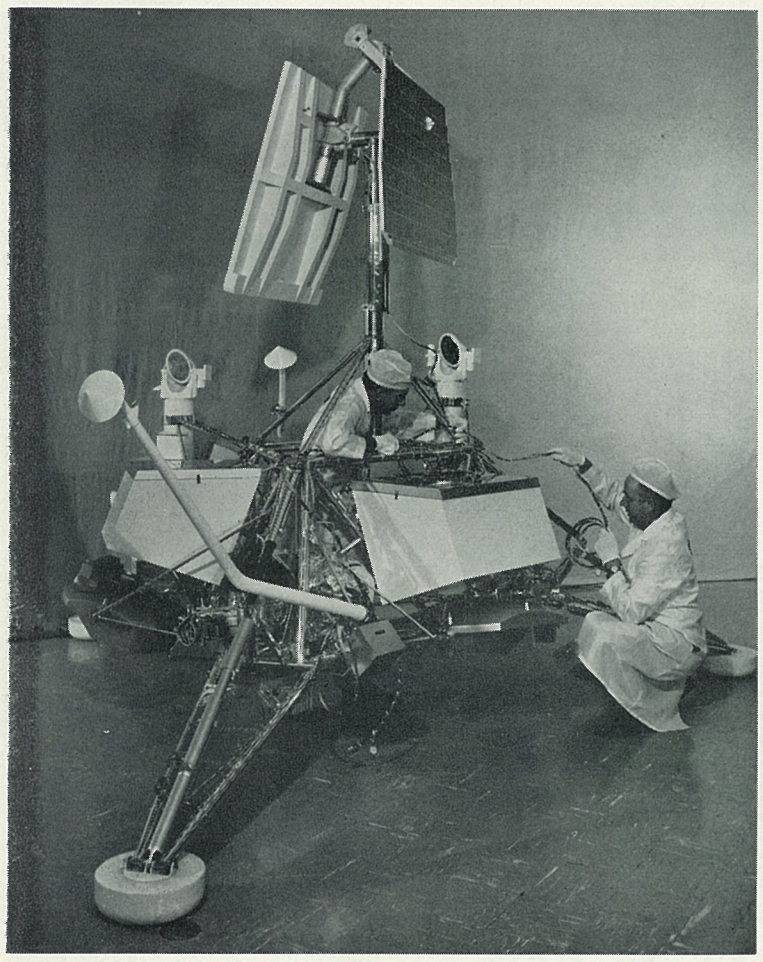
Three television cameras, two pointing up, one down, will send pictures back to earth. Above the upward viewing camera are gimbal-mounted mirrors capable of directing the television cone of vision through 360 degrees of azimuth and from 15 degrees to about 45 degrees below the horizontal line of the spacecraft.

Once landed, scientific instruments will collect lunar soil samples and make geo-chemical analyses, "feel" the lunar surface to assess its physical properties and measure radiation and particle fields of the moon's atmosphere.

Surveyor will operate on the moon's surface for about a month.

About 114 pounds of instruments are included in the 600 pounds of spacecraft that will touch down on the moon.

Atlas/Centaur launches of Surveyor will be made from Cape Canaveral.



MOON VISITOR — This is spacecraft that Atlas/Centaur will launch for soft-landing on moon, scheduled for 1964. It will carry impressive array of scientific instruments.

Volume Purchasing Continues To Score Saving For Dynamics

"Volume Purchasing" — by which single suppliers, chosen competitively, service more than one division of General Dynamics—saved the corporation more than $1 million during 1962.

Items and services which are procured on a volume basis include maintenance and operating supplies, photo supplies, paints, auto fuels, auto rentals, janitorial items, industrial lamps, hotel accommodations, wire and cable, refrigerant gases, electrical connectors and semi-conductors, perishable tools, lumber, duplicating supplies, and equipment, typewriters, etc.

Of the approximately 70 agreements in force, one of the most recent to be renegotiated covers "cut paper" (bond, duplicator and index papers).

Negotiated by General Dynamics/Astronautics' procurement under F. J. Traversi, vice president—administration, and director of material for Astro, the new agreement includes even more favorable prices for 1963 to the extent that an additional saving of $50,000 is expected.

Under the Volume Purchasing Program, negotiations for new agreements or renewals are conducted by individual divisions on assignment from the corporation, and price benefits are available to all divisions that wish to take advantage of them. The corporation-wide program is coordinated by W. G. Evans, corporate director of materiel.



"I wish you'd think of these last-minute details before I'm ready to go to work!"

Ten GD/FW Engineers Receive Masters

Ten GD/Fort Worth employees —all of research and engineering organization — received master's degrees from Southern Methodist University recently. They are:

Master in engineering (aero major): William M. Curtis III.

Masters in civil engineering: Jerrol D. Clayton, Edwardo W. Gomez, John R. Hart, and Edward L. Hines.

Master in electrical engineering: Mark R. Pharr.

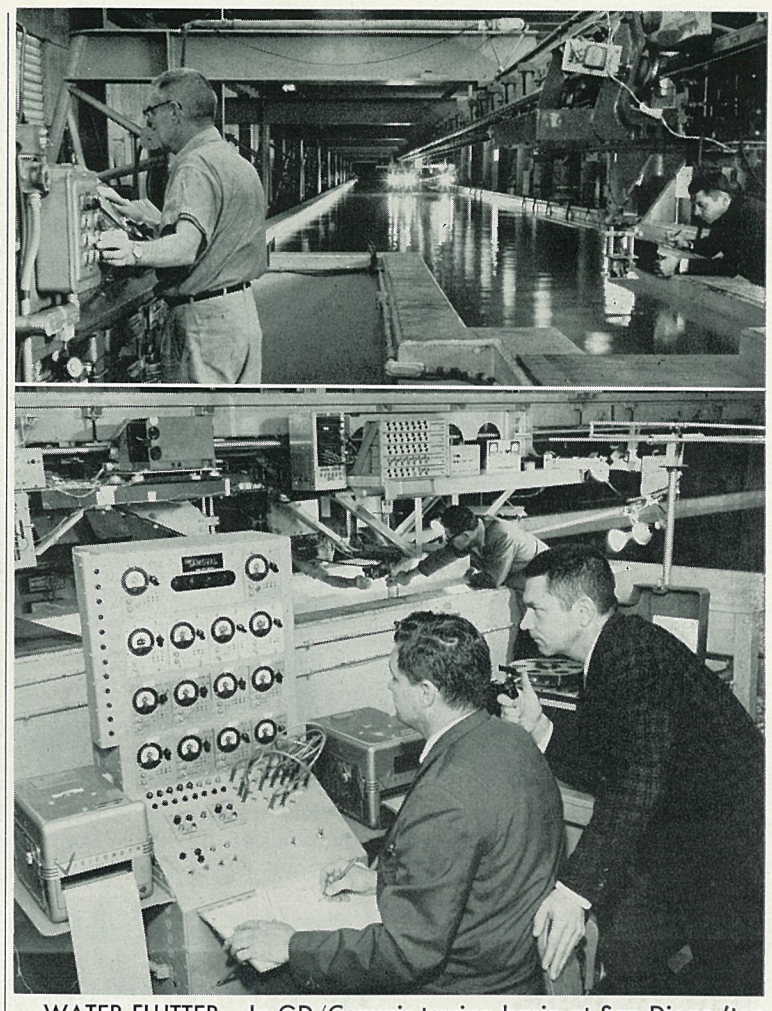
Masters in mechanical engineering: Clarence H. English, Hugh F. Hefley Jr., Robert L. Macy, and James H. Smith.

Dynamics Praised For 990 Triumph

Kudos for Convair-built 990s come from Roger Bacon, Flight International magazine aviation writer, who wrote recently:

"The way in which General Dynamics has supported its jet airliner customers and triumphed over technical difficulties says a lot for the integrity of the company.

"If Convair were to produce another civil airliner, and if I had an airline, I'd buy it!"



WATER FLUTTER—In GD/Convair towing basin at San Diego (top photo) new recording system facilitates flutter research. In lower photo W. G. Walker, senior instrumentation engineer, watches gauges of mobile telemetering station, while Ted Sladek, senior hydro engineer, right, holds control that can stop specimen. In background are Lou Figueroa, in charge of hydrofoil strut tests, and D. H. Tribbet, hydro technician.

Telemeter Device Flashes Data During High Speed Basin Runs

Hydrofoil component tests, conducted under a Navy research contract at General Dynamics/Convair's hydrodynamics towing basin during the last couple of months, have brought into being a new instrumentation recording system which greatly expands the basin's capabilities for vibration evaluation.

Research into the flutter characteristics of supercavitating hydrofoils (configurations which produce air cavities, or bubbles, back of the struts as they cut through the water) required a sensitive and versatile recording system to gather accurate data during high speed runs, explained R. C. Peller, design specialist directing the research program.

At his instigation, flight instrumentation engineers, under direction of L. R. McClain and V. J. Schack, instrumentation group engineers, evolved telemetering equipment which would record responses on tape that could be played back a number of different times at varying speeds and sensitivities.

Major sections include the mobile ground telemetering receiving station developed by W. G. Walker, senior instrumentation engineer, with the assistance of Dept. 31 technicians. Incorporated were components designed by Ken Jones and Joe Harris, also senior instrumentation engineers. D. K. Hall and H. A. Meyers were responsible for development of the transmitting package mounted on the carriage which speeds the specimens down the 300-ft. tank.

Now high-speed hydro tests can be conducted at 100 feet per second with reaction data flashed to the receiving station via the transmitting package from strain gauges measuring bending, torsion, pressure points, hinge movement, and velocity. Data is relayed as radio signals from an FM transmitter through an antenna on the receiving station and recorded on magnetic tape for later processing in the engineering data station. At the same time, the data also is recorded on a direct writing oscillograph at the receiving station while tests are in progress.

These direct oscillograph recordings can be processed in 10 seconds and viewed on the spot for quick evaluation for the next test step.

Magnetic tape records go to the data reduction station for either analog or digital conversion. End results can be in a variety of forms—IBM cards, plots, or tab sheets, as well as the permanent tape recordings which can be enlarged in scale for easy and accurate evaluation.

Most involved in the system's development at the data station's end of the line were W. A. Harpster, electronics engineer; H. A. Brown, engineering development technician; and C. R. Lewis, electronics engineer who has designed a new transistorized telemetering package.

Peller explains that, in gathering knowledge for future design of hydrofoil struts, 18 configurations with rudder-type and spoiler-type controls have gone through vibration acceleration testing in the towing basin. Louis Figueroa, senior dynamics engineer, has been in charge of the test program with Ted Sladek, senior hydrodynamics engineer, directing the test operations in the basin.

Other improvements recently updating GD/Convair's towing basin include an electro-hydraulic drive system. This gives fast acceleration to allow data accumulation throughout most of the specimen's run. Hydro test engineers have improved the carriage by installation of nylon wheels and silicone rubber shock absorbers; and a water tunnel, beneath the main tank, provides a new test means with visual observation for checkout of small models in moving stream of water.

Test projects currently under way in the basin, which is under direction of W. B. Barkley, hydrodynamics group engineer, with H. E. Brooke, chief of hydrodynamics, are evaluation of seaplane takeoffs, missile impacts, ground effect machine stability, buoy and sonar body configurations, calibration work on meters.

Safety Engineers Society Organized

Sam Rowland, GD/Convair safety engineer, is one of the first officers of the newly-formed San Diego Society of Safety Engineers.

Rowland will serve as secretary. Another General Dynamics man, B. Gawain Bonner of General Atomic, heads the group as president.



FAST SLOPE—General Dynamics skiers taking part in bus trip to Mammoth March 16-17 will be greeted with scenes such as this one admired by Bill Witzell and Joan Brennan on earlier visit to snow country. Weekend will feature annual races sponsored by ARA club.

Skate Sessions Will Resume

Following a two months' "vacation," weekly ice skating sessions for GD/Astro, GD/E and GD/Convair folk will be resumed with a gala "Opening Night" party tomorrow (March 7) at the new Mission Valley Ice Plaza.

Admission is free, and refreshments will be furnished by Astro-Blades.

Only charge will be for skate rental (20 cents per hour).

All General Dynamics employees, their families, and guests are welcome, with admission by ID card, photo badge, or regular ARA-CRA Ice Skating Club membership card.

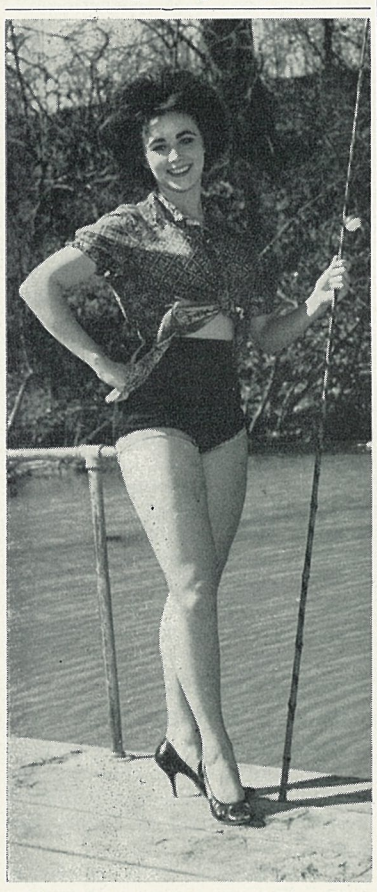
The weekly sessions will continue as long as attendance is adequate, according to Bud Davies, ARA commissioner. Sessions include private skating each Thursday from 6:30 to 8 p.m., after which skaters may continue as long as they wish with the general public, at no additional charge.

Special rates for members are adults, $1; juniors (12-18), 80 cents; and children under 12, 60 cents.

A free instruction program consisting of three groups for beginning, intermediate and advanced dancers will be taught by Audrey Ericson.

The Ice Plaza is located in Mission Valley Shopping Center.

Applications for ARA-CRA Ice Skating Club membership (free) will be accepted opening night.



LIZ TAYLOR? — Nope, it's Gayle Baker, GD/FW steno, but resemblance is astonishing.

Convair and Astro Snow Skiers To Visit Mammoth in March

The snows of Mammoth Mountain will be crisscrossed by General Dynamics skiers March 16-17 when enthusiasts from both Convair and Astro divisions travel there via chartered bus.

The trip is sponsored by the ARA Snow Ski Club and activities will include that group's annual races.

Major attraction is the bargain rate at which the trip is offered: $19 per person, including transportation, lodging and two meals. Reservations will be accepted through March 8 at employee services offices at both divisions.

Travelers will leave GD/Astronautics about 5:30 p.m., March 15, returning there late Sunday night.

Ski races will be open to all, although an entry fee of $1 will be charged those who are not members of the ARA club.

Details of the weekend will be discussed at the Astro club's meeting tonight (March 6) in ARA Clubhouse, or may be obtained by contacting Gene Rockafellow, ext. 1581; Charlie Hill, ext. 1308; or Hal Moore, ext. 1487, all at GD/Astro main plant.

NAS Civilians Shade ARA, CRA Pistol Teams

ARA and CRA pistoleers were topped by Naval Air Station civilian hot shots in pistol division of the recent NIRA Western Region Conference gun shoot.

Astro's team, with 1,142 points, was just 9 points behind the first-place NAS entry. Convair's team of Jim Halfacre, Ralph Picard, Vern Mardis, W. G. Walker finished third with 1,117.

Sailplane Pilots Groom Craft For 17th Annual Championship

General Dynamics soaring experts will again have leading roles in the 17th Annual Pacific Coast Mid-winter Soaring Championships this weekend (March 9-10) at scenic Torrey Pines glider site.

Top sailplane pilots from California, Nevada, and Arizona will be competing for the coveted John J. Montgomery trophy awarded each year to the champion glider performance. It was won last year by John Williams, formerly of GD/Electronics. Another Montgomery trophy winner, Sterling Starr of GD/Astronautics, also will compete.

Spectators will have a chance to see two outstanding ships perform for the first time, said CRA Commissioner Don Larsen. Bob Beebe of San Francisco will bring his German high-performance KA6 and Ray Parker of Los Angeles will be flying a new "T-bird" all-wood high performance sailplane.

Jim Spurgeon of GD/Convair, as master of ceremonies, will announce and explain flying events from 10 a.m. to 5 p.m. both days. Contest events are spot landing, bomb drop, distance, altitude (Convair trophy), duration, and aerobatics, if air traffic permits.

Others helping with arrangements include Walt Mooney of General Atomic and president of the Associated Glider Clubs; Bob Baker of GD/Electronics; Bill Petrie of GD/Astro; Duke Mancuso, GD/Astro, who is preparing pre-meet publicity with Spurgeon; Paul La Freniere and Vic Korski of GD/Convair.

Among General Dynamics pilots expected to compete besides Mooney and Starr, are Duke Stallings, Ernie Shattuck, Al Owens, Keith Allen (son of Fred Allen), DeVaughn North, all of GD/Astro; John Swinson of GD/Electronics; Steve Kesckes of GD/Convair.

Other well-known glider pilots entered are Williams, George Tweed, formerly of GD/Astro, and Gene Whigham, former CRA Glider Club commissioner.

There will be no charge for spectators but a $1 parking fee will be collected.

GD/E Senior Engineer Honored For Design

E. C. Gear, GD/Electronics senior chemist engineer, has been notified that his design of a molded electron gun has been selected for an award in the Materials and Design Engineering magazine's annual contest.

Gear will receive a cash prize of $50 in addition to a plaque.

The newly-developed concept of electron guns, which are the source of cathode ray beams in cathode tubes, including the Charactron tube, has proved more precise and rigid than conventional guns.

Gear was instrumental in developing the new design during his assignment as GD/E project engineer in the field of electron gun development under a Navy Bureau of Ships research contract.

Toastmasters Club To Elect Officers

Dynamic Toastmasters Club No. 457 will gather tomorrow night (March 7) for their annual election of officers.

The 6 o'clock dinner meeting will be held at Pernicano's restaurant on Fifth St.

Well-Known Speakers Signed For NMA Area Conference

Management techniques will be stressed in the coming Management Conference of the NMA San Diego Area Council March 16 in University of San Diego's Moore Hall of Law.

L. G. Lawson of GD/Convair, area council president, said that at least 400 members of the six area clubs and guests are expected. The all-day conference, 9 a.m. to 3:30 p.m., is open to the general public. Admission, including luncheon, is $5 for singles, $7 for couples.

Well-known speakers on the program are Dr. Floyd M. Anderson, executive director, American Institute of Family Relations, who will talk on "The Greatest Management School — Your Home." Dr. William R. Parker, University of Redlands professor of social sciences, speaks on "The Key to Dynamic Living—Your Feelings," also during the morning session.

Afternoon lecture, "Greater Efficiency Through Group Ingenuity — Five Ways," will be by Max B. Skousen, management training specialist.

Assisting Lawson in arrangements are presidents of all six clubs, including Ed Russell, president of the GD/Astronautics group, and Al Fink, president of GD/Convair Management Club. Russell is in charge of promotion and publicity and Fink is chairman of the arrangements committee.

Wes Magnuson of Astronautics, area council treasurer, will act as treasurer for the conference and W. J. Wood of GD/Convair is chairman of the luncheon committee. General chairman is Robert Boomer, president of Ryan Electronics' club.

Tickets are available from Management Club members or at the Mission Valley Center Camera Shop.

Garden Clubs Meet in Park

ARA and CRA Garden Club members will gather at 7:30 p.m. today (March 6) at the Floral Association Building, Balboa Park, for a joint meeting.

Meeting subject is fuschias, with two expert speakers on the agenda.

Albert Henderson of Henderson-Richard Nursery, Chula Vista, will demonstrate cutting back plants to obtain maximum bloom, while Frank Quintana of Country Squire Fertilizer Co. will discuss soils, potting media and fertilizing.

Several members will bring extra dahlia tubers to the meeting, where they will be shared with the club membership. A variety of fine door prizes will be given away.

ARA Commissioner Everett Henderson has announced that the club's joint Rose Show, slated April 21, will also be discussed.

Gun Club Members Will View Movie

Gun Club members at GD/Convair, GD/Electronics, and GD/Astro will view a movie on hunting dogs and their training at the March 12 meeting, 7:30 p.m., Gillespie Field Clubhouse.

According to Jack Swank, CRA commissioner, the film, called "Point," should be of interest to all hunting enthusiasts.

Next ATA registered trapshoot has been scheduled for March 17 at the Gillespie Field range. Competitors will shoot at 100 16-yd. targets; 100 handicap, and 50 for doubles. Trophies will be awarded in all events.

Auxiliary Will Hold Luncheon Meeting

Monthly luncheon meeting of Astro Wives' Auxiliary will be held March 20 at Islandia Restaurant, Mission Bay.

A social hour, starting at 11:30 a.m., will be followed by luncheon at 12:30.

Wives of GD/Astro employees wishing to attend may make reservations by calling Peggy Ferriera, 273-7634, or Hazel Hanson, 582-7843.

Pomona Team Wins Archery

GD/Pomona's Archery Club team took top spot in the recent Western Region National Industrial Recreation Association's telephonic archery tournament in mid-February, competing with four other West Coast teams.

Pomona bowmen piled up a score of 1,059 points in the handicap shoot with CRA archers trailing with 983 for second place. Astro's team was third with 868; Aero-Jet, fourth, 810; Fairchild, fifth, 640.

Three Convair archers had highest individual scores, without handicap, of any competing in the indoor park rounds. Bob Lorch of Dept. 401 was high man with 106 out of a possible 120 points. Harry Ross (Dept. 400) shot 101; CRA Commissioner Al Phipps, third, 97.

The Convair team shot its match at Balboa Park's Morley Field range while Astro team marked up their scores at the Astro Recreation Area. Commissioner Phipps was commended by San Diego Industrial Recreation Council for the part he played in directing the tournament.

Rosters Required For IRC Volleyball

Rosters for GD teams planning to enter the men's volleyball IRC league must be turned into CRA and ARA headquarters by March 12, reminds Pete Beyrer of CRA office.

Already two Astro 10-man teams, one from GD/Electronics, and one from Convair's fire department have indicated their intentions to compete in the coming tournament.

A pre-season tourney the week of March 18 will kick off volleyball league play before teams go into a round-robin tournament during the next seven weeks. Games will be played in Balboa Park's Municipal Gym.

Entry fees for all General Dynamics teams will be paid by CRA and ARA.

Teams should be registered at CRA headquarters, ext. 1245, Plant 1, or ARA headquarters, Astro site, ext. 1111, before the deadline date.

Heller Will Conduct Session on Values

E. D. Heller, manager of value control at General Dynamics/Astronautics, will join the nation's leading value engineering executives in presenting the 1963 National Value Engineering Conference April 10 at Los Angeles State College.

Heller will head one of the technical sessions, speaking on "Functional Definition and Evaluation."

Convair and Astro Set Salvage Times

Saturday schedule at GD/Convair and GD/Astro salvage yards for the next four weeks is:

GD/Astro—March 9, 23.

GD/Convair—March 16, 30.



"Wait 'til you see the one that won first prize."

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions each Saturday, 7 a.m. to noon, Clairemont Mesa flying site. Annual Free Flight Flying Scale contest April 6-7.

ARCHERY — Regular shoot March 10, Balboa Park Field Range.

BASKETBALL — Shop league championship game March 12, 7:55 p.m., Muni Gym, Balboa Park.

BOWLING—Registration open for annual CRA plant championships, April 20-21, 27-28. Entry blanks at local bowling alleys or CRA office, Bldg. 32, Plant 1.

BRIDGE CLUB — Weekly sessions each Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy.

CAMERA CLUB — Joint CRA-ARA field trip to Anza-Borrego Desert area March 17. Meet at ranger's station at 8 a.m.

DELTA DIVERS — Meeting March 19, 7:30 p.m., Convair executive dining room.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Regular meeting March 19 at Gillespie Field Clubhouse. Potluck dinner at 6:30 p.m.

GARDEN CLUB — Joint CRA-ARA meeting tonight (March 6), 7:30 p.m., Floral Association Bldg., Balboa Park.

GLIDER CLUB—Pacific Coast Mid-winter Soaring Championships March 9-10, Torrey Pines glider site.

GOLF — CRA tourney March 9-10, Coronado course.

GUN CLUB — Meeting March 12, Gillespie Field Clubhouse, 7:30 p.m. ATA registered trapshoot March 17, Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions for GD people start tomorrow (March 7) at Mission Valley Center Ice Plaza. First night free with ID cards. Skating hours, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m. House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children under 12, 20c.

PISTOL CLUB — Next shoot March 10, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (March 7), 8 p.m., club headquarters on Harbor Dr.

RIDING CLUB — Meeting tomorrow (March 7), 7:30 p.m., Gillespie Field Clubhouse. April Fool's dance March 30.

ROAD RUNNERS — Weekend outing March 15-17 to O'Neil Park near El Toro base.

ROCKHOUNDS — Weekend outing to Wiley Well area March 9-10.

ROLLER SKATING — Skate night March 18 at Skateland, Front and G Sts. Free tickets at employee services.

SNOW SKI CLUB — Weekend trip to Mammoth March 16-17. Register at employee services.

SPORTS CAR CLUB—Meeting tonight (March 6), 7:30 p.m., main dining room of Convair cafeteria, Pacific Hwy.

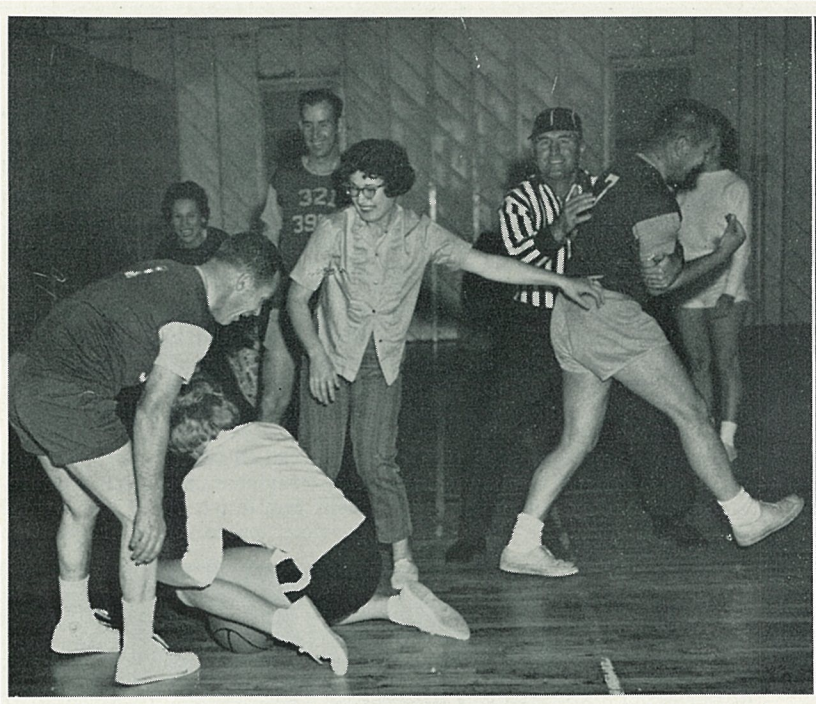
STAMP CLUB — Meeting March 7, Convair executive dining room, 7:30 p.m.

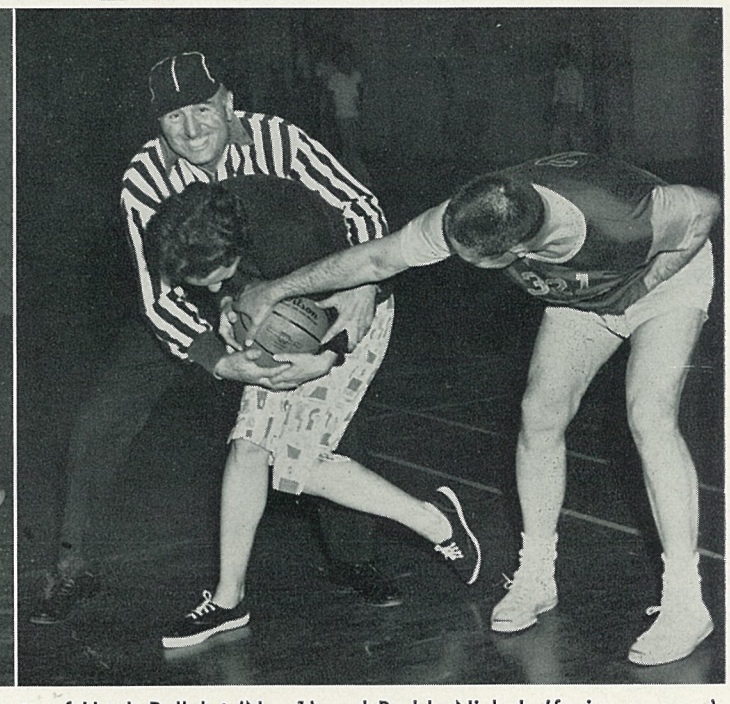
SWIM NIGHT — Family swim night March 16 at Mission Beach Plunge, 7-9 p.m. Free tickets at employee services, Bldg. 32, Plant 1.

TROPICAL FISH CLUB — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

VOLLEYBALL — Register men's teams for IRC tourney with Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.





"ALL-STAR" MELEE—Shots above show how fair sex (with help) dumped husbands, bosses in unorthodox Thirty-Niner vs. Thirty-Ninette battle: at left, Terry Theilig crouches on ball as Referee Dick Draskovich restrains Carlos Richardson (No. 7) against protests of Hank Pallulat (No. 1) and Buddy Nichols (facing camera). Wanda Richardson, Annette Nichols, Dixie Cartwright cheer Terry's bulldog tactics. At right, Draskovich helps Wanda clutch ball away from husband, Carlos.

Sports & Recreation

Thirty-Niners Reach Finals

Thirty-Niners swept the second round of GD/Convair "slow break" shop basketball play without an argument, winding up the win flurry with a 28-10 game with Electronics last week.

Their opponent in next week's championship game was to be decided last night (March 5) when GD/Electronics and Electronics teams played off for first-half honors.

Thirty-Niners will meet the winner of that tilt in a championship game next Tuesday (March 12) at 7:55 p.m. in Balboa Park's Muni Gym with supporters urged to turn out to cheer their favorites.

Other scores in final second-half games, during the last two weeks, were Rose Canyon, 27, Hi-Lows, 18; GD/E, 25, Electronics, 24, on Feb. 19. Last Tuesday (Feb. 26) games saw Hi-Lows going down before GD/E, 41-16.

Second-half standings are:

Team	Won	Lost
Thirty-Niners	4	0
Rose Canyon	3	1
GD/Electronics	2	2
Electronics	1	3
Hi-Lows	0	4

Rockhounds to Visit Wiley Well Region

CRA Rockhounds are looking forward to their first overnight trip of the year when they travel to the Wiley Well area, between Desert Center and Blythe, this weekend, March 9-10.

Commissioner Dan Whorton says that rock hunters will be searching for good specimens of fire agate in Coon Hollow.

Signs and streamers will be put up Friday night to mark the turnoff from Hwys. 60 and 70 and maps will be sent to members. They will also be available in the CRA office this week.

Field trip chairmen are Hal Leppart and Ralph Phillippi.

Anglers to Receive 1962 Fishing Awards

Winners of button and trophy awards for the 1962 fishing season will receive their prizes at the March 19 meeting of the CRA Fishing Club. announced Commissioner Bob Menzie.

A potluck dinner at 6:30 p.m. will open the meeting in the Gillespie Field Clubhouse. Business session will follow at 7:30 with a movie on fishing shown during the evening.

Aeromodelers Plan Contest

Preparations are nearing completion for CRA Aeromodelers Annual Free Flight Flying Scale contest set for April 6 and 7.

Judging for appearance points will be held in the Convair cafeteria, Pacific Hwy., on Saturday night and flying competition is slated the next day at the Kearny Mesa flying site. Multiple entries are permitted.

Trophies will be awarded for first three places in junior division, age 15 and under, and in open division, 16 and over. There also will be special awards for the best World War I, best World War II, best low wing, and most unusual model.

A sweepstakes trophy will be given for highest total points and a "worst crack-up" award will go to the unluckiest contestant.

Rubber-power flying scale event has been added this year to encourage younger members and to reactivate some of the "old-timers," said Larry Peterson, club president. There will be trophies for best rubber-powered ship in both open and junior classes.

For further details contact either Peterson, ext. 1477, or Don Larsen, CRA commissioner, ext. 2289, both Plant 1.

Nat Antonioli Wins Two Model Trophies

Nat Antonioli of GD/Convair Dept. 6, won second and third place trophies in free flight model events in the Southwest Championships at Phoenix, Ariz., in mid-February.

Only other General Dynamics' modeler to place in the championships was Dan Dexter, 17, son of General Atomic's Rolland Dexter.

'Thirty-Ninettes' Defeat Men in 'Basket Football'

Wives, daughters and secretaries shellacked their menfolk in a riotous, rough and tumble "basketball" game, slightly flavored with football and rugby, when the leading Thirty-Niners in GD/Convair's shop league took on the "all-star" Thirty-Ninettes.

Thirty-Ninettes, taking a night out along with their basketball-playing husbands and bosses, held their unblemished record (they had never played before!) with a 29-10 score.

Red-faced Thirty-Niners charge "foul play and prejudiced refereeing." They claim referees played on the girls' team—knocking the ball out of Thirty-Niners' hands, allowing at least nine lovelies on the court at one time, shutting eyes to two-handed dribbling and other unorthodox ball handling!

Chagrined losers say that they were more than gallant in handicapping themselves with baseball gloves during first half, playing left-handed the second.

Proof of prejudice, say Thirty-Niners is that not a single foul was called on the girls, while they ran up 14. In fact, Carlos Richardson was benched on five fouls—but, on the other hand, his young son, Tom, was keeping score!

Led by Jeannine Briggs, wife of Manager Bob Briggs of the Thirty-Niners, the ladies' crew really threw themselves into the fray, tackling, body blocking, and ball slinging.

Terry Theilig, daughter of Ken Theilig, was high scorer with 6 good points. Jeannine Briggs, Ellen Pallulat, Wanda Richardson each dropped a couple of baskets. Others on the winning side were Annette Nichols, Dixie Cartwright, Marion Eilers, Donna Pallulat, Sandra Sandstrom.

Opposing them were Manager Briggs, Richardson, Buddy Nichols, Wayne Beck, Walt and Ed Cartwright, Hank Pallulat, Bob Eilers.

R. O. McIntire, Dept. 324 assistant supervisor, and Dick Draskovich, professional football referee, took on "umpiring" chores. Draskovich used his red flag at every chance, and applied football rules wherever possible, calling everything but 15-yard penalties! Or so the losers complain.

CRA TRAILERITES THREE YEARS OLD

CRA trailerites will celebrate their third anniversary date on a March 15-17 outing when they rendezvous with the Douglas Jetliners from Long Beach at O'Neil Park near El Toro base.

Both the Road Runners and Jetliners will gather for a joint potluck Saturday evening to observe birthdays—the Road Runners' third and the Jetliners' fifth.

Lee Kunkle is in charge of Road Runners arrangements as wagonmaster with assistance of Roland Lathrum.

Other plans afoot are for participation in the Border District Trailer Rally April 5-7 in Blair Valley of the De Anza-Borrego Desert area. Dave Jarman of the Wagons West Trailer Club is in overall charge.

Harry and Fran Rush of the CRA group planned to attend the meeting of the Travel Trailer Clubs of America board of directors in Bakersfield last Saturday.

Riders Explore Tierra Ranch

Thirty-five horsemen and their families of CRA's Riding Club turned out for the monthly outing Feb. 17 at Tierra Ranch, near Ramona.

While those with mounts took to the trail for a three-hour ride to Iron Mountain and back, the younger set enjoyed a hay ride arranged by Fred Kershaw, chairman of the all-day affair. Everyone met at the ranch for hot dogs and beans dished up by Riding Club wives.

Members will meet tomorrow night (March 7) at 7:30 p.m. in Gillespie Field Clubhouse to plan their April Fool's dance, reminded V. V. Thomason, club president.





WESTERN LIFE—CRA trail riders are pictured on recent outing that involved ten-mile jaunt from camp to foot of Iron Mountain. At left, Lou White and Betty Sims dish up chow line. At right, youngsters leave on hay ride. Standing is Fred Kershaw, outing chairman.



OFF TO PAKISTAN—Julius Singer, 19 years a GD/Convair employee, turns in his badge to Agnes Faught (Dept. 3) as he resigns his metalworking job for a Peace Corps assignment in East Pakistan.

Veteran GD/Convair Metalworker And His Wife Join Peace Corps

A long-time General Dynamics/Convair metalworker left San Diego a couple of weeks ago on a journey which will take him half-way around the world to share his skills with the people of East Pakistan.

Julius Singer, 54, and his wife, Josephine, resigned from their jobs on the same day, Feb. 15, to realize their hopes of many months as they begin their training for a Peace Corps assignment in southern Asia. Singer, an expert metalworker and development mechanic in Dept. 101, left GD/Convair after nearly 19 years, while Mrs. Singer terminated her 10-year civil service clerical post at the Naval Hospital.

Their home was leased, their furniture sold within days of their departure to clear the way for culmination of months of planning and preparation for two years of service in a foreign land. Since Singer came to the United States in 1929 from his native Hungary, he said he has hoped for a chance to repay in some way what his adopted country has done for him—and the Peace Corps was his natural choice.

It took little soul-searching for the Singers to reach their decision to apply several months ago. They both feel that this is exactly, in their own words, "what they should do, and what they want to do."

Even mastering the Bengalese tongue doesn't faze Singer, who pointed out that, "I had to learn English, didn't I? And that was really hard!"

First stop on their itinerary will be Puerto Rico for two months' Peace Corps training, then will come another month of intensive study of the culture and language at the University of Colorado before final orders.

They leave two grown sons behind, Richard in GD/Electronics (whose first child, a son, was born Feb. 13), and Stanley, now on military leave from GD/Astronautics.

Space Professionals Honor Grant Hansen

Grant L. Hansen, vice president and program director—Centaur at General Dynamics/Astronautics has been awarded a lifetime honorary membership in the National Society of Aerospace Professionals.

The honor was bestowed Feb. 21 by Bennett Moe, president, during a dinner meeting in San Diego. It recognized Hansen's "oustanding aerospace accomplishments." Hansen was principal speaker at the meeting.

Importance of Value Engineering In Obtaining Contracts Outlined

Value engineering and its increasing importance to all companies seeking government contracts was stressed by Lt. Col. Roy E. Tavasti of USAF Headquarters, Washington, D.C., during a recent one-day visit to General Dynamics/Convair.

Lt. Col. Tavasti, of the Office of Directorate of Procurement Management's labor relations branch, brought with him the Air Force's recently-compiled film on value engineering to show General Dynamics key personnel in the San Diego area. At the Feb. 21 preview were management and value control representatives from GD/Astronautics, GD/Electronics, GD/Convair, and AF plant representatives.

The film soon will be available for showings throughout industry. Plans are under way for a public presentation at a coming Society of American Value Engineers session, said H. P. Williams, GD/Convair value control manager.

Lt. Col. Tavasti also reviewed latest revision of the AF procurement regulation 70-16 and Armed Services procurement regulation revision 13 which spells out requirements of value control programs within companies submitting proposals for Air Force and Department of Defense contracts.

During an informal discussion preceding the film showing, GD/Convair President J. H. Famme re-emphasized the "importance of top management understanding and backing value engineering for effective in-house programs," stating further that "real success comes only when all decision-making people have the value vs. cost state of mind."



VE REVIEW—Lt. Col. Roy E. Tavasti, USAF Hdqtrs., Washington, D.C., meets with GD/Convair President J. H. Famme (right) and H. P. Williams, value control manager, during value engineering discussion at San Diego division.

'Gold' Paper Clip Value Symbol At GD/Fort Worth

The lowly paper clip has become a "status symbol" at GD/Fort Worth.

King-sized clips, coated with gold, are now given to graduates of value engineering seminars at FW.

Their purpose: to serve as a tie clasp.

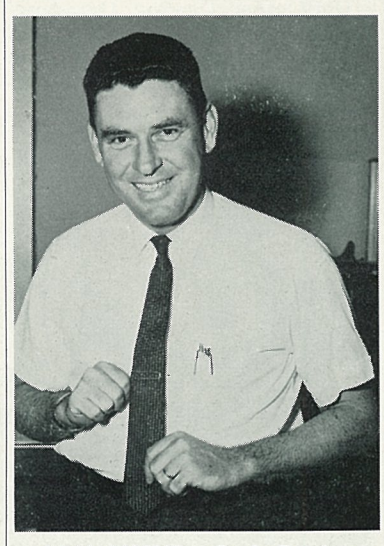
"The aim of value control is to accomplish a function reliably at the lowest possible cost," said Rand Creasy, deputy value control coordinator.

"We feel we've done this by substituting an attractive 3½-cent item for one that ordinarily costs $1 to $2.50. The paper clip performs the same function at infinitely less cost."

Graduates of VE classes 13 through 19—recently completed—have received the gold-plated trademarks. Those who attended classes one through 12 may obtain a clip by contacting either Creasy or Bill Nutt, value control training coordinator at GD/FW.

"These gold-plated tie clasps can serve as an important reminder that GD/Fort Worth is value-engineering conscious," the coordinator added. "We'd like for our people to wear them both in-plant and when away from the company on business.

"It signifies we care about cost."



REAL VALUE—G. I. Davis secures gold-plated paper clip worn by VE seminar graduates as symbol of GD/FW division's cost-consciousness.

Dynamics' Value Committee Plans Two-Day Chicago Meet

Fifteen value engineering key personnel from 10 General Dynamics divisions, Canadair Limited, and Corporate Office are expected to attend a meeting of the General Dynamics Committee on Value Control in Chicago, Ill., March 21-22.

They will hear W. R. Feichtinger, chief value engineer, U. S. Navy Bureau of Weapons, discuss the latest planning in BuWeps on value engineering. Only other speaker from outside the Corporation is W. G. McMurry formerly of GD/Fort Worth, now value control administrator, Military Products Division of Motorola, Inc., who will talk on "Your Responsibility to Your Vendors."

General Dynamics men on the two-day agenda are E. W. Feddersen, GD director of manufacturing engineering, who will open the meeting and close it with a summary of activities and assign projects; H. P. Williams, GD/Convair, "After Training—What Then?"; F. B. Kohrs, GD/Electric Boat, "Contracting for Value Engineering"; M. M. Reeder, GD/Electronics—SD, "Reliability Through Value Engineering"; W. G. Evans, GD director of materiel, who will analyze value engineering portions of the Armed Services Procurement Regulation; W. P. Roberson, GD/Fort Worth, "Can the Computer Price Our Products?"

Also present will be E. D. Heller of GD/Astronautics; E. H. Conklin, GD/Pomona; L. W. Droel, Stromberg-Carlson division; J. E. Hill and A. S. Ross of GD/Electronics—Rochester, N.Y.; Karl Michelson of Canadair; R. J. Lutz, GD director of advanced projects; and representatives from Electro Dynamics and Liquid Carbonic divisions.

Security at GD/FW Sparks Idea to Control Guard Dogs Remotely by Radio Commands

The Air Force's heralded K-9 Corps may some day soon be "mechanized."

In a recent experiment at Carswell AFB's Sentry Dog Section, one of the "combat"-trained German Shepherds responded to commands given through a transistorized radio attached to his collar.



BUSINESS END—Guard dog at Carswell AFB, key figure in "radio control" project, warns GD/FW's Ernest Garcia to back off with that camera!

The idea belongs to GD/Fort Worth's industrial security department, which is working with the Air Force and local law enforcement bodies in the experiment.

The highly trained dogs now perform sentry duty at the end of a six-foot leash carried by their trainer, the only person from whom they will take commands.

The man-dog team can cover the distance normally covered by three or more human sentries at night because of the dog's supersensitive sense of smell. He can sniff out an intruder at distances of 300 yards and up.

If the dog could be trained to take commands through the collar radio—and Carswell trainers are confident he can—the canine trooper could conceivably cover a several-mile area.

Among those attending a recent demonstration were GD/FW's I. B. Hale, industrial security manager; Phil F. Cummins, development project liaison; Mason Lankford, industrial security investigator.

State Makes Study On Women's Jobs

Mrs. Rebecca H. Sparling, design specialist at General Dynamics/Pomona, has been named to an informal advisory committee for the Department of Education, State of California.

Mrs. Sparling was in Sacramento Feb. 21 for a meeting on technical and semi-professional jobs for women, including engineering aides, electronic technicians, mathematicians and draftsmen.

Infrared Radiation Absorption Probed by Balloon to 118,000 ft.

A select space science laboratory team under Dr. Michael Griggs is busy this week at General Dynamics/Astronautics transposing data from a unique space probe conducted Feb. 22 by Astro.

The probe, believed to be the highest balloon-borne infrared radiation measurement ever attempted, was conducted over Arizona.

Studies were made of the amount of infrared radiation absorption by the atmosphere up to altitudes of 22 miles. Information gained may help in the design of military space detection systems, as well as to provide astronomical and meteorological data.

Project leader was Dr. Fred Casal, Astro staff scientist. He directed a six-man Astronautics crew that launched the 128-foot diameter balloon containing 800,000 cubic feet of helium gas.

Launch occurred at 9:37 a.m. at an Army test site near Yuma.

Instrumentation carried aloft included a specially designed interferometer spectrometer, made available by the Air Force Cambridge Research Laboratory through Louis Block. It recorded infrared heat wave lengths and relayed information back to earth via radio signals.

The balloon rose to 118,000 feet.

At approximately 12:30 p.m. signals were sent to the balloon to release the payload, which returned slowly to earth below the deflated balloon. Recovery was at 1:25 p.m. near the Merana Air Force strip north and west of Tucson.

Astronautics funded the balloon test with the Air Force supplying the special instruments and vehicles. The U.S. Navy also assisted.

Astro's space science laboratory is headed by Dr. A. E. S. Green.



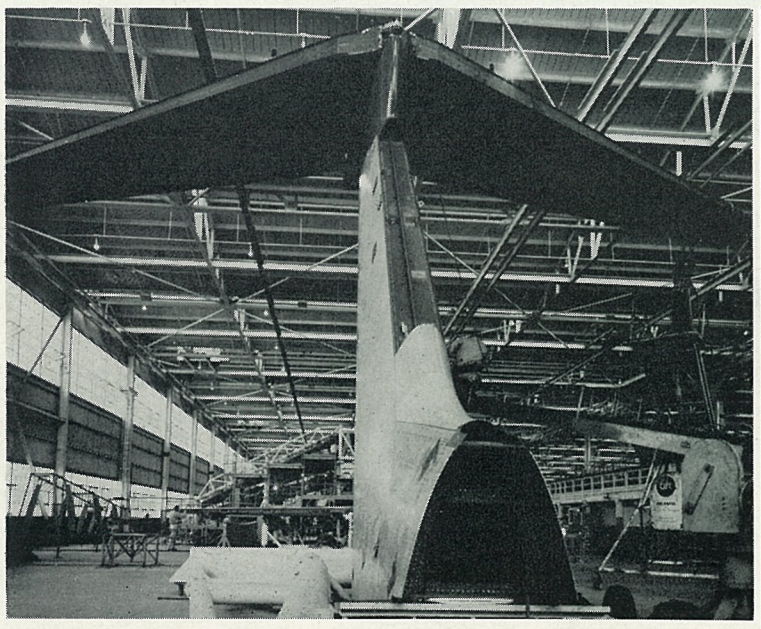
"Your wife is nice but she isn't the kind of collateral I had in mind."

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 6 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, March 20, 1963



SKY SKIMMER—Huge tail section for Air Force C-141 jet cargo plane will leave GD/Convair this week for first journey as it rolls by rail to East Coast. Horizontal stabilizer has 50-ft. span; top of tail will be almost 40 feet from ground when mated to fuselage.

First C-141 Empennage To Travel East by Rail

First C-141 empennage is due to roll out of the General Dynamics/Convair plant at San Diego this week on its cross-country trip by rail to Lockheed-Georgia Co. in Marietta, Ga.

Scheduled date for shipment, via special flat car, is March 21, but last indications were that departure of the huge tail section for the Air Force jet cargo plane might well come earlier this week.

The first empennage going to Lockeed-Georgia is the static article which will be applied with loads to prove out the tail's structural strength. First production empennage is due for April delivery.

Already on board at Marietta is the first set of wing box beam assemblies delivered last month by Avco Corporation's Aerospace Structures Division.

GD/Convair has the subcontract for five C-141 production empennages as well as static and fatigue test articles for the 145-ft. long C-141 Starlifter. Designed for the Military Air Transport Service, the huge craft with a wing span of more than 160 feet, will be able to carry either 154 combat-ready troops, 127 paratroopers, or 80 casualty litters with eight attendants. Commercial version will airlift 96,000 pounds of cargo.

First test flights are expected later this year.

'Commonality' Stressed In GD/FW's F-111 Bid

General Dynamics was more disposed toward commonality as a philosophy than was its competitor in the F-111 competition.

This observation was made by Richard Austin Smith, author of a two-part article in Fortune Magazine entitled "The $7-Billion Contract That Changed the Rules." The first installment appeared in March.

In the article Frank W. Davis, GD/Fort Worth president, was quoted as saying: "We read the work statement as putting significant emphasis on commonality. We went to a great deal of trouble to have a common structure, and paid some weight penalties to do it — some performance penalties as well, on both Navy and Air Force versions."

Throughout the competition, the article said, Air Secretary Zuckert repeated his manifesto: "The name of the game is a single plane for two services."

(Defense Secretary McNamara had decided that the versatile F-111 could be made to fill requirements of both the Navy and Air Force, and thus become the cornerstone of his effort to cut costs.)

"Boeing's strategy," the article said, "was not so much to oppose McNamara as it was to design for the Navy and the Air Force better planes than their individual requirements called for.

"It would thus bank on the hope that the best plane would be irresistible, regardless of commonality . . . a tremendous amount of effort would be put in the Air Force version of the TFX . . . but the separate Navy version would also be made as attractive as possible (within the limits of Boeing's lack of experience in designing modern Navy fighters).

"If all this had to be done at the sacrifice of McNamara's dream of a single blended plane, then so be it."

It was this service-oriented approach—plus Boeing's decision to gamble on a "new" General Electric engine that was ultimately shelved for the Pratt & Whitney model—which made Boeing "cut quite a different figure" from GD-Grumman, the article asserted.

There was also concern, the article said, that the Navy was

(Continued on Page 6)

Overhead Cut $189,723 By Close Dollar Count

Cost-conscious men and women at General Dynamics/Convair, ever watchful of ways to pare dollars and cents from overhead expense, have been responsible for $189,723 in savings since the first of the year, reports the Resources Economics control center.

This nearly $200,000 cut has come from 60 projects which, by the end of the year, will realize a total saving of close to a million dollars.

President J. H. Famme, in a division notice to all supervision,

(Continued on Page 2)

First Awards Okayed in GD/E Cost Reduction

One woman and five men received first awards under General Dynamics/Electronics' new Employee Suggestion and Cost Improvement Proposal plan as GD/E assumed its own program last month.

F. B. Wagner, manufacturing control assistant foreman, was first to have a CIP approved and implemented under GD/Electronics' cost improvement program.

Hazel Barnard (Dept. 76-0), J. A. Lenart (Dept. 33-0), H. D. Simpson, J. M. Montoya, E. M. Korsmo, all of Dept. 71-0, received checks for their ESs.

Wagner's CIP will save the division $1680 through negotiation for credit for stocked parts no longer needed.

Three of the ES winners suggested improvement in methods in their functions. Mrs. Barnard received $100 partial payment for a more efficient method of summarizing spares requirements reports by setting up a data processing tab deck to keep reports up to date continuously. The ES will be reviewed in six months for final payment.

Both Montoya and Korsmo developed tools which cut manhours and simplify operations in the factory area. Montoya devised a tool to hold material securely during forming of rubber mounts for a REINS part, eliminating the time involved in the former method of freezing the rubber for accurate forming. He received a $10 award.

Korsmo's shop aid is a metal tool to lay over parts so that holes can be drilled accurately without constant measuring for

(Continued on Page 2)



FIRST AWARDS—Six GD/Electronics people, first to receive ES and CIP honors under GD/E's new cost improvement program, are (from left) J. M. Montoya, J. A. Lenart, Hazel Barnard, H. D. Simpson, E. M. Korsmo, and CIP winner, F. B. Wagner.

Viasa, Cathay Pacific Crewmen Attend 880-M Training Class

Flight crews from Viasa, Venezuelan airline, and Cathay Pacific Airways, Hong Kong, are in the midst of a four-week training period at General Dynamics/Convair, heading toward their flight engineer ratings for the 880-M jet transport.

Eighteen pilots and flight officers are being guided through the 120-hour classroom familiarization by production flight instructors Roger Chaney, C. J. Falkenthal, J. J. Coil. In addition, each will have 10 hours in the 880-M cockpit procedures trainer before they leave the San Diego plant the end of this month, said P. H. Selby, flight training supervisor.

From Maiquetia Airport, Viasa's base of operations near Caracas, are Hector Figarella, who heads the group of Boris Piñero, Jesus Suárez, Alfonzo Benavides, Jose Ramirez, Leonidas Crespo, Frank Gasio, Luis Sardi, Simón Arocha, José Obregón, Pedro Cortez, Oscar Cuevas, Rafael Perez, ground school instructor and Gonzalo Párraga, representing the Venezuelan Ministry of Communications which corresponds to the Federal Aviation Agency.

Cathay Pacific's flight crew consists of Capt. A. W. Wales, B. R. Moody-Jones and L. D. C. Cowper, flight officers, and M. Gotfried, flight engineer.



HEADS TOGETHER—First group in GD/Electronics' advanced value control seminars intently studying value vs. cost problem are (from left) L. J. Moran, R. L. Hurst, William Meisburger, M. M. Reeder, GD/E value control coordinator, Steve Secketa, Frank Arb, G. L. Hale, W. H. Goggin of GD/Convair educational services (standing).

GD/E Value Training Seminars Scheduled

How to select a project for value control analysis is prime objective of the new series of specialized seminars inaugurated early this month in General Dynamics/Electronics value control training.

Seven men from GD/E's Plant 1 facility heard General Manager John L. Lombardo point out, at the opening session, that government requests for quotes now include requirements that bidding companies describe their value control operations.

"We must take advantage of every opportunity and method to reduce costs, not only by constant value analysis, but by all other means at our disposal," Lombardo told the specially-selected group. He made specific reference to GD/E's new ES/CIP program, now operated in-house, as a valuable adjunct to the overall cost improvement drive.

Most of the men chosen to attend the continuing seminar series already have had the general 40-hour value control indoctrination, explained M. M. Reeder, GD/Electronics value control coordinator. The follow-on training emphasizes more particularly identification and implementation of cost savings and the importance of maintaining a value control climate within departments.

The seminars are conducted mainly for department coordinators, representatives, and other key personnel directly responsible for GD/E's value control efforts. Classes, held six hours a day for four days, are kept small to encourage more individual participation, Reeder continued.

In the initial seminar, March 5-8, were Frank Arb, G. L. Hale, R. L. Hurst, William Meisburger, L. J. Moran, Steve Secketa, K. A. Seely. All are of GD/E Plant 1 operations department under J. H. Thompson, manager of operations.

Departmental coordinators in GD/E's value control organization, who will be drawn into the training during the next few months to better recognize where value control can be applied in their areas, are: G. F. Belgum, controller's office; A. S. Freedman, reliability and quality control; R. E. Kenyon, plans and programs; R. J. Cary, engineering; T. D. Patrick, operations; F. E. Hamlin, materials; and at Plant 2 (Hancock St. facility), E. N. DeJonge, engineering; R. E. Hickok, operations; R. C. Mansell, reliability and quality control; W. W. Lynt, materials.

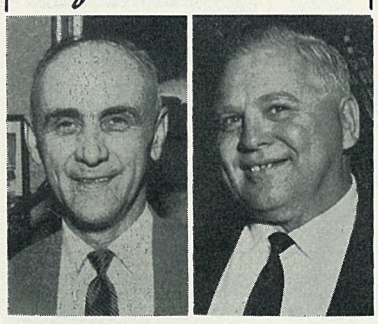
Course material for the seminars has been worked out with W. H. Goggin of GD/Convair educational services who is giving most of the lectures.

Seat Safety Belts On Sale at Cost

A new shipment of quality seat belts is now on sale at cost prices at GD/Convair safety crib, Bldg. 32, Plant 1.

Prices are: metal-to-metal and metal-to-fabric belts, $5.20; belt and shoulder harness combinations, $7.90; children's belts, $6.19. Tax is included.

Log Book Entries



Leo Niemet, right, GD/Convair Dept. 102, joined ranks of 35-year service veterans recently. At left is Elmer L. Brown, Dept. 48-03, who recently received 25-year emblem.

Service Emblems

CONVAIR

Service emblems due during the period March 16 through March 31.

Twenty-five-year: Dept. 27-1, J. R. Brown; Dept. 140, F. H. Dernbach.

Twenty-year: Dept. 42-1, G. W. Carr; Dept. 48-90, L. C. Brandvig; Dept. 102, G. T. Adams; Dept. 131, T. O. Peacock; Dept. 133, C. M. Canoy, P. A. Chapman, Lavern Drinkard; Dept. 140, H. A. Farnsworth, W. F. Mogan; Dept. 400-7, H. J. Cronk.

Fifteen-year: Dept. 14, Agnes T. King, Martha B. Williams; Dept. 171, R. S. Reithmayer, Vardie Taylor.

Ten-year: Dept. 16-1, Allan Walden; Dept. 23-3, Patricia J. Roundy; Dept. 25, Ray Horn, D. C. Taylor; Dept. 42-3, V. C. Holt Jr.; Dept. 91-1, Hazel D. Matthews; Dept. 93-3, O. J. Ohlsson; Dept. 119, K. E. Bennett; Dept. 400-1, C. L. Slauson.

GD/ELECTRONICS

Twenty-year: Dept. 73-20, F. B. Wagner.

Fifteen-year: Dept. 42-00, R. D. Tuttle; Dept. 55-00, G. E. Boldman.

Ten-year: Dept. 21-00, Reiko Nakano; Dept. 71-00, J. F. Wexler; Dept. 72-00, Helena T. Sileneck.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending March 1 and March 8.

Dept. 43, Louise A. Rath and Irene A. Swalm, $11.55 each (joint award).

Dept. 115, L. F. Stephens, $84.40.

Dept. 131, J. W. Burgreen, $10.

Dept. 140, C. F. Hagata, $10.

Cost Improvement Proposals for the same periods:

Dept. 34, M. Formanek.

Dept. 91, Barbara W. Vincent.

GD/ELECTRONICS

Employee Suggestion awards approved for periods ending Feb. 15 and March 1.

Dept. 30-0, I. Alameda, $10.

Dept. 33-0, J. A. Lenart, $64.20.

Dept. 34-0, W. M. Stevens, $10.

Dept. 71-0, E. M. Korsmo, $12.50; J. M. Montoya, $10; H. D. Simpson, $53.60; A. P. Denny and H. K. Hollenbeck, $5 each (joint award).

Dept. 72-0, B. B. Lundy, $10; R. F. Narvaez, $10.

Dept. 76-0, H. M. Barnard, $100.

Cost Improvement Proposal for period ending Feb. 15.

Dept. 73-0, F. B. Wagner.

Retirements

CONVAIR

AMMONS—Eugene J., Dept. 160. Seniority date Oct. 4, 1951, retirement effective Feb. 28, 1963.

BARONE — Samuel C., Dept. 48-81. Seniority date Dec. 8, 1948, retirement effective July 31, 1962.

COLLINS — Houston B., Dept. 14-4. Seniority date March 31, 1952, retirement effective Feb. 28, 1963.

CRAWFORD—Roy F., Dept. 223. Seniority date Aug. 31, 1949, retirement effective Feb. 20, 1963.

CUMMONS — Daniel J., Dept. 21-3. Seniority date May 29, 1952, retirement effective Feb. 28, 1963.

DRAPER—Harold G., Dept. 123. Seniority date Oct. 2, 1947, retirement effective Feb. 28, 1963.

EARLE—Isham J., Dept. 91-8. Seniority date Jan. 14, 1952, retirement effective Jan. 8, 1963.

GRAHAM—Irene M., Dept. 16-6. Seniority date July 10, 1953, retirement effective March 8, 1963.

GRANT—Agnes T., Dept. 3-5. Seniority date Oct. 22, 1956, retirement effective Feb. 28, 1963.

GRENIER—Emanuel, Dept. 48-52. Seniority date March 22, 1951, retirement effective Oct. 21, 1962.

LOPEZ — Luis, Dept. 146. Seniority date Dec. 5, 1951, retirement effective Dec. 22. 1962.

MACKAY—John K., Dept. 14-4. Seniority date Oct. 6, 1948, retirement effective Feb. 28, 1963.

MOORE—Clayton C., Dept. 25-1. Seniority date Oct. 26, 1950, retirement effective Feb. 28, 1963.

OSTROGER — Daniel, Dept. 120. Seniority date Oct. 24, 1950, retirement effective March 8, 1963.

RIDGEWAY — Zeryl A., Dept. 171. Seniority date July 10, 1941, retirement effective Feb. 28, 1963.

STONE—Harold W., Dept. 48-81. Seniority date Jan. 11, 1951, retirement effective Aug. 3, 1962.

WILLIAMS — John J., Dept. 401-7. Seniority date Feb. 14, 1952, retirement effective Feb. 28, 1963.

They're Spun

Monthly Mugs 'Home-Grown'

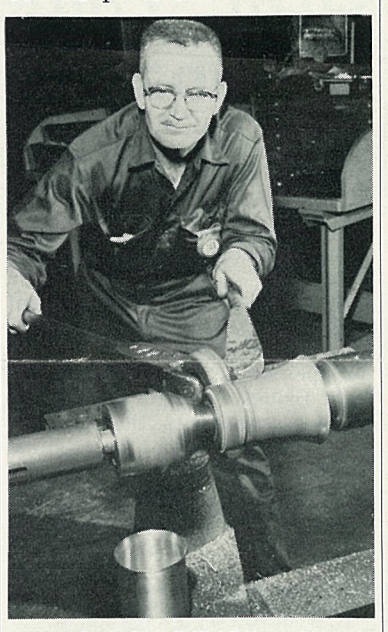
That bright, shining copper "Mug" going monthly to some deserving Management Club member is a home-grown product!

Wesley Swanson, now of Dept. 101, has been spinning the mugs since the first was awarded John Glenn back in August, 1951. Since then, Swanson, spinning lathe operator formerly in experimental, has formed each copper mug given the Management Club member chosen for his club or community activities, as well as the stainless steel Mug of the Year.

It takes about 10 minutes to shape the cups from a 7½-in. blank on the spin form machine, now located in sheet metal area. Swanson says between 20 and 25 operations are needed to get the true shape as the metal is "pushed" over the spin-forming tool a quarter of an inch at a time.

A spinning lathe operator at GD/Convair since 1947 when metal parts were first formed for Convair-Liner mockups, Swanson is particular to see that the metal thickness is held uniform, that there are no wrinkles or breaks.

Strips of metal are bent to form Mug handles which are attached in welding and the good-looking portraits decorating the Mugs are metal-etched in GD/Convair photo lab.



MUG "SPINNING" — W. A. Swanson, veteran GD/Convair spinning lathe operator, has formed every Mug awarded Management Club members. Shot shows him pushing metal over forming tool; in foreground is shaped copper Mug.

'Confederate Money' Coin Club Subject

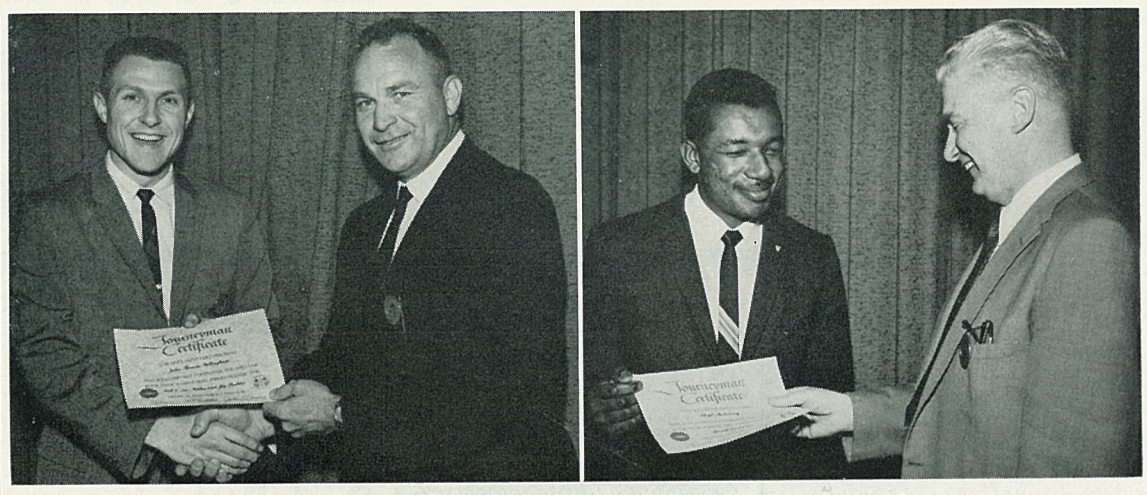
Coin collectors at GD/Convair and GD/Electronics will view colored slides on Confederate money at tomorrow (March 21) night's CRA club meeting.

Meeting time is at 7:30 p.m. in the main dining room of the Convair cafeteria on Pacific Hwy., reminds John Barrett of GD/E, club president. Refreshments will be served.

Deaths

CONVAIR

CROUSEN—John H., Dept. 3-1. Died March 8. Survived by wife, Vera, two brothers, three sisters.



NEW JOURNEYMEN—Latest appretices to complete GD/Convair's continuing four-year program are (left photo) John Willingham, tool and diemaker and jig builder, who received certificate from E. H. Damarus, chief tool engineer; and (right) Lloyd McKinney, aircraft electrician, receiving journeyman certificate from F. H. McLaughlin, superintendent of final assembly, field operations.

Montgomery and Williamson Seeking Mgt. Club Presidency

Ralph M. Montgomery (Dept. 41-1) and Joe L. Williamson (Dept. 401-5) will be battling it out as aspiring candidates for presidency of the GD/Convair and GD/Electronics Management Club.

Montgomery, currently first vice president, and Williamson, board of control member, head the slate of 1963-64 nominees revealed at the March 13 meeting. J. L. Terrien, chairman of the nominating committee, disclosed a list of 35 candidates for the six club offices and board of control positions.

Ballots will be mailed to all Management Club members next week, he said. They must be marked and returned by April 11. Election results will be announced at the April 17 meeting with installation held in May.

Following is the complete list of nominees:

First vice president — G. O. Couchman (Dept. 101-0), C. H. Hahn (Dept. 28-0), D. L. Macey (Dept. 42-6).

Second vice president — Joe Freeman (Dept. 42-6), M. C. Tombler (Dept. 6-0), R. G. Macomber (Dept. 93-0).

Recording secretary — D. D. Dimmitt Jr. (Dept. 3-1), Kent Sinclair (GD/E Dept. 32-00), J. W. Woodhouse (Dept. 23-1).

Financial secretary—H. B. Day (Dept. 16-6), L. C. Stuckey Jr. (Dept. 48-09), M. L. Sweeney (Dept. 42-5).

Treasurer — G. V. Baughman (Dept. 91-1), A. B. Oberg (Dept. 131-0), L. F. Tubbs Jr. (Dept. 42-6).

One-year board members — T. C. Berardini (Dept. 123-0), R. D. Chesler (Dept. 6-2), B. A. Clemmens (Dept. 131-0), G. M. Davidson Jr. (Dept. 14-8), J. A. Dempsey (Dept. 16-6), M. B. Fuhrmann (Dept. 129-0), R. J. Haney (Dept. 23-3), H. C. Hoskins (Dept. 42-5), L. F. Kruse (GD/E Dept. 71-00), V. P. Mavrinac (Dept. 401-7), C. F. Uhl (Dept. 171-0), J. E. Yonke (Dept. 15-0).

Two-year board—W. J. Durflinger (Dept. 115-0), R. T. McMurry (Dept. 25-0), H. C. Murray (GD/E Dept. 70-00), E. H. Wesp (Dept. 401-1).

Three-year board—G. R. Bailey (Dept. 48-09), K. W. Wulfemeyer (Dept. 3-2).

Delta Divers Hear About 'Whale Riding'

A skin diver's sensations while riding a whale interested members of CRA Delta Divers at their February meeting.

Chuck Nicklin, expert skin diver and long-time member of the club, showed movies and described his unique experience off the La Jolla coast. He was able to mount the huge mammal for a bareback ride after it was exhausted from efforts to free itself from a commercial fishing net.

Last year Nicklin accomplished almost the same feat on 30-ft. basking sharks giving him a reputation as the group's daredevil.

Delta Divers meet in regular monthly sessions the third Tuesday of each month. Families are welcome to attend the 7:30 p.m. meetings in Convair executive dining room, said Harry Ruscigno, CRA commissioner.

Daughter Selected Sweetwater Queen

A beauteous GD/Convair daughter, Sandra Martino, was chosen by her classmates to reign as queen of Sweetwater Union High School's annual Sweetheart's Ball last month.

The title "Queen of Hearts" went to Sandra, not only for her beauty but her many other attributes. The 17-year-old daughter of A. J. Martino (Dept. 401-0) had already been selected as the school's senior standout for "Most School Spirit."

Island Hiker Urged To Add Swim Stint

Don Myers, supervisor in GD/Convair material control, has devised his own physical fitness regimen—doing his 50-mile stint in bits and pieces as he hikes to work from his Coronado home, some 3½ miles from the San Diego plant.

Now, cohorts are urging him to go all the way and ignore the ferry ride for a swimming sprint across the bay, briefcase held high over head!

First Awards Okayed in GD/E Cost Reduction

(Continued from Page 1)

each hole. His award was $12.50 for a saving of over 16 manhours.

Lenart designed a tool for testing 18 capacitors at once in six minutes — the time it took to test each one individually in receiving inspection. He received $64.20 for an annual dollar savings to the division of $642.10 and 254 manhours.

Simpson received $53.60 for suggesting progressive inspection of an intricate housing assembly during machining operations, eliminating a second set-up for inspection after completion. The step-by-step inspection of details saves six hours a part and will save the division $535 a year.

Charity Donations Of $1,000 Approved

Two donations of $500 each were approved for San Diego charities at this month's meeting of the GD/Convair Employees' Con-Trib-Club committee.

Arthritis and Rheumatism Foundation will receive $500 to help in the chapter's program of research, medical education, and diagnosis and treatment of those afflicted with the diseases. Second contribution in the same amount will go to the SD County Council of Churches for its Senior Citizens' Lounge.

Last month the committee voted a contribution of $500 for repair of television sets at Vauclain Home, and another $500 for YMCA memberships.

Overhead Cut Since Jan. 1

(Continued from Page 1)

titled "Cutting Costs in 1963—Your Job and Mine," emphatically urges every employee to maintain constant vigilance in detection of inefficiency or waste in every operation:

"I do not need to emphasize the importance of this effort to constantly improve our competitive position and better the opportunities for getting new business. Your wholehearted cooperation and active participation will be noted and appreciated."

More interest is being generated daily in cost improvement throughout every area in the division, reports the Resources Economics group which spearheads the division's efforts to convert cost reduction goals into actual dollar savings.

However, they need suggestions from each employee within the plant to effectively pinpoint wasted dollars.

Improvement of methods, such as removal of Western Union TWX machines from Bldg. 7, barrel yard, and Rose Canyon, improved utilization of key punch equipment and release of unnecessary equipment; elimination of second-shift utility and maintenance cost at Rose Canyon, has saved $86,199 in the last couple of months.

A watchful eye on all utilities —electricity, water, and telephone use—has realized $29,288.

Maintenance and construction cost-cutting, such as rearrangement of steam piping to reduce steam pressure where it is not needed, has saved $13,808 and elimination of 178 in-plant reports has boosted systems and procedures and electric data processing project savings to $60,428.

Anyone with an idea which might correct problems in his individual area is asked to call Resources Economics at ext. 1640, Plant 1. All possible help will be given and every suggestion thoroughly considered.

Con-Trib-Club Earns Thanks

GD/Convair Employees' Con-Trib-Club has received a citation from Big Brothers of San Diego County in recognition of financial assistance to the philanthropic group which helps fatherless boys in the area.

E. R. Fink, Con-Trib committee member, accepted the award on behalf of Con-Trib-Club. It reads in part . . . "in recognition of unselfish efforts and continuing support of the Big Brother program, enabling further guidance and example to fatherless boys in San Diego County."

Two $500 contributions from Con-Trib-Club have helped hire the agency's first caseworker in one of the first steps in the group's proposed three-year expansion of its program.

AUTOS BANNED IN PASSAGEWAY

Passageway along the east side of Bldg. 4 at GD/Convair Plant 1 has been closed to vehicular traffic. From now on it will be open only to pedestrians.

General Dynamics NEWS

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APRIL FLY-AWAYS—At left, Varig of Brazil's first 990A shows bright blue emblems of South American airline as it is readied for delivery in next few weeks while, at right, third 880-M for Viasa, Venezuelan airline, rolls out of final assembly. Plane bears KLM markings on opposite side. In center is group of Viasa and Cathay Pacific Airways flight crews at GD/Convair for production flight training on 880-M systems and in cockpit procedures trainer.

Fall Delivery Slated For Garuda 990A Jets

R. F. Conley, General Dynamics director of commercial sales, returned from the Republic of Indonesia this month following successful arrangements for delivering three Convair 990A jet airliners for use by Garuda Indonesian Airways.

Deliveries are expected to start this fall and training of Garuda flight and maintenance crews is scheduled for midsummer at San Diego.

Top level discussions extended over an eight-week period during January and February which culminated in approval by President Sukarno at Djakarta, Indonesian capital.

"The 990As will be used on Garuda's international routes which serve Singapore, Bangkok, Hong Kong, Manila and Tokyo," Conley reported. "They will make possible route expansion which Garuda has under consideration."

The Convairs, which will have all the top performance features which make them the world's fastest passenger transport, will replace turboprop Electras, making the latter available for use on the high density domestic routes.

"The domestic air market is a big one in Indonesia," Conley reported. "Remember, this country includes some 5,000 islands with a total population of 100 million (the fifth largest national population in the world, preceded only by China, India, the USSR and the U.S.) and it is 3,000 miles from one end of the nation to the other.

"It is potentially a rich nation, too, ranking third in natural resources."

Conley was assisted during conferences by August Dasaad of Dasaad Musin Concern, Djakarta, General Dynamics representatives in Indonesia. He said that language was no problem during the discussions, as all of the top level government officials speak excellent English.

Expected to visit San Diego soon for conferences are Capt. Partono, president of Garuda, and Dr. Yap Kie Tik, airline technical director. They come with a long background of experience with Convair airplanes. For years they have operated all three of the Convair-Liner versions, 240, 340 and 440 (**General Dynamics NEWS**, Jan. 9, 1963) as part of the Garuda fleet.

SHARE Group Sees Systems Operating At GD/E Facility

More than 200 "SHARE" delegates saw a demonstration of computer output equipment, designed and manufactured by General Dynamics/Electronics at San Diego, while attending a coast conference in February. (SHARE refers to users of IBM 704 and 7090 computer systems.)

Buses transported computer experts from the El Cortez Hotel meeting place to GD/Electronics Plant 2, 1895 Hancock St., on the evening of Feb. 27. There they watched the S-C 4020 Computer Recorder, S-C 3070 Electronic Printer, and the S-C 1090 Display Console in operation.

Delegates represented companies in the United States, France, Germany, and Italy.



IT'S A DEAL—In top photo, R. F. Conley, General Dynamics director of commercial sales, shakes hands with President Sukarno of Indonesia during 990A jet discussions. Below, clockwise from left, are August Dasaad, Dynamics sales representative, Chirul Saleh, Indonesia minister of basic resources, Conley, R. Iskandar, minister of air communication, Dr. Sumarno, governor of the Bank of Indonesia.

Four Airlines To Get Jets During April

Six Convair 990A and 880-M jet transports will be leaving the San Diego flight line of General Dynamics/Convair during the next month as they go to four foreign and domestic airlines.

Varig Airlines of Brazil will take delivery of three Convair 990As during April.

Ruben Berta, president of Varig, said the 990A exceeded all requirements during recent demonstration flights over the carrier's routes and that Varig wanted to put the planes in service as soon as possible.

Varig's 990As will first go into service between Buenos Aires and Los Angeles, with stops at Sao Paulo, Rio de Janeiro, Lima, Bogota, and Mexico City. Later, the planes also will be used between Buenos Aires and Miami, Fla.

Viasa of Venezuela will receive another 880-M, its third, some time after mid-April to expand its all-Convair transport fleet. It placed its first 880-M into service the summer of 1961. Viasa also has recently acquired two more Convair 340s and an additional 440 to give it a fleet of 10 Convair twin-engine and jet airliners.

Second of Japan Air Lines' follow-on order of three 880-Ms was due for March delivery. The third will go to the Tokyo-based airline later this summer. Its initial order of five 880-Ms was completed last fall.

American Airlines will take delivery on its fifth and last 990A by the end of this month. It placed the first of its fleet of 15 of the basic 990 version into service over continental passenger route just a year ago, March of 1962.

SAVE Meeting Will Be in NYC

Top Department of Defense officials will address the Society of American Value Engineers (SAVE) 1963 convention April 25-26 in New York City, with General Dynamics men filling key program roles.

Both E. D. Heller, manager of value engineering at GD/Astronautics, and B. P. Schroeder of GD/Pomona, are members of the conference committee. Heller is SAVE national secretary.

Kick-off speaker at a conference session on administration will be Marion Hicks, vice president-legal and procurement, GD/Fort Worth.

Schroeder will serve on a panel "Problems of Value Engineering Education," while Heller will present a paper "Value Engineering and Cost Target Programs."

Guest speakers include Thomas Morris, Assistant Secretary of Defense; G. Fouch, Deputy Assistant Secretary of Defense; Barry Shillito, president, Logistic Management Institute; and Anthony R. Tocco, SAVE president.

Additional information and conference reservation forms are available from Heller at GD/Astro ext. 2467; B. W. Kahla (president, San Diego SAVE chapter), GD/Convair ext. 2325; and M. M. Reeder, GD/Electronics ext. 1136, San Diego.

Scientists and Quality Experts Will Attend Reliability Panel

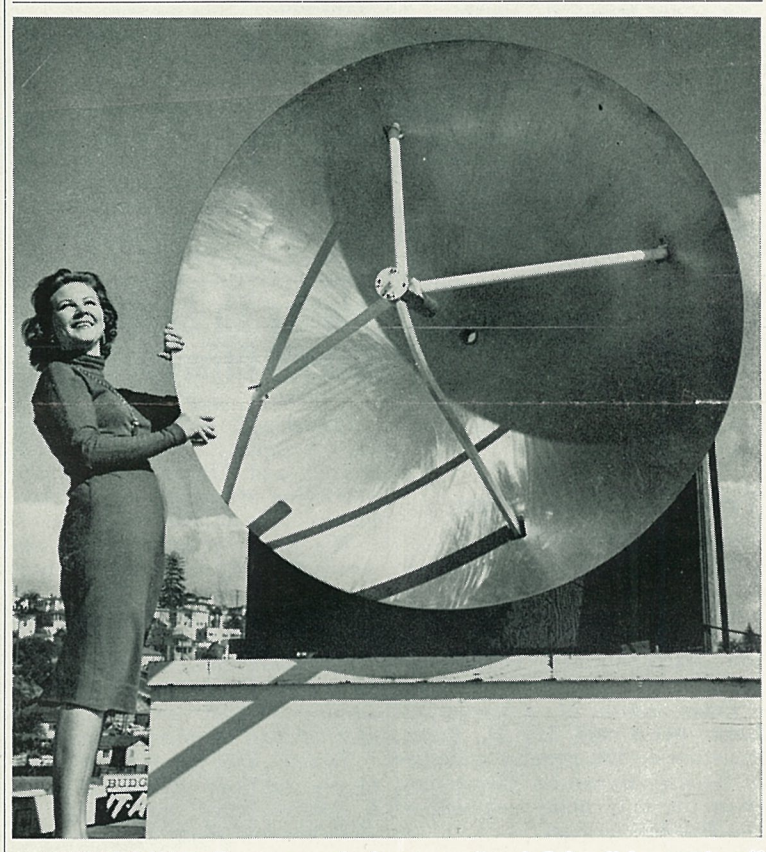
Key scientists and quality control experts from each of the divisions will attend the General Dynamics Corporation Panel on Reliability at GD/Fort Worth April 1, 2, and 3.

Panel officers include: J. Y. McClure, GD corporate director of reliability and quality control, permanent panel chairman; E. J. Behney, Electric Boat manager of quality control, chairman of the quality control panel; and T. W. Dunn, Electric Boat assistant general manager for reliability, chairman of the reliability technical panel.

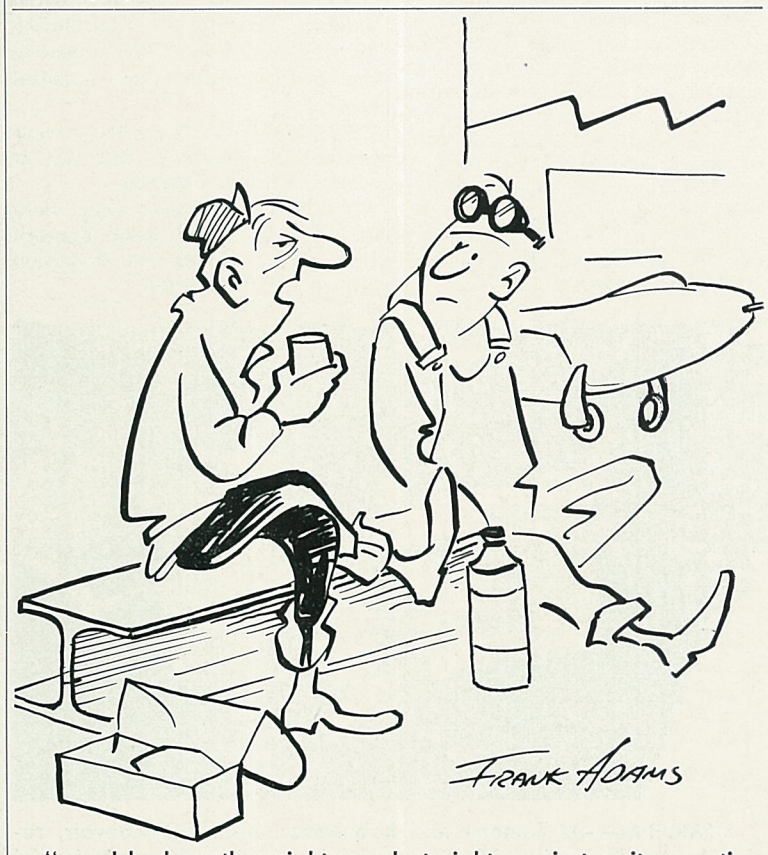
On April 3, the group will divide into separate panels to discuss mutual problems in reliability, technical and quality control areas.

The panel was established in 1959 and serves as a focal point for the corporation's consideration of reliability and quality control.

"The panel stimulates action within the corporation and the divisions to further the development, organization and coordination of reliability and quality control reports with the corporation and its divisions to solve our mutual problems," said E. R. Weiher, GD/Fort Worth manager of quality control.



PRETTY DISH—Two attractively streamlined 5-ft. dishes pair off as Martha Schweiger (Astro Dept. 322-8) adds glamour to the scenery alongside GLOTRAC antenna reflector dish undergoing checkout on Bldg. 51, Plant 1, antenna range. GD/Convair fabricates dishes for Astro-developed high-precision space vehicle tracking system.



". . . I had another nightmare last night . . . just as it came time for the coffee break, the bomb shelter siren went off."



HIGH STEPPERS—Square dance commissioners and their wives from three General Dynamics divisions, Mr. and Mrs. Maury Scholz of GD/Convair; Mr. and Mrs. Lloyd Scarborough, GD/Pomona; Mr. and Mrs. Marty Stutz, GD/Astro, hold reunion at annual all-General Dynamics Hoedown hosted by PRA group March 2 at Pomona. GD/Pomona's Convairiety Steppers observed 10th anniversary at event.

Astro Son Wins Soaring Trophy

An Astro son was the only General Dynamics sailplane pilot to win a trophy in annual Pacific Coast Mid-Winter Soaring Championships held at Torrey Pines glider site March 9 and 10.

Keith Allen, 17-year-old son of Astro's Fred Allen, rolled his glider within four inches of the chalk target to win the spot landing event. He also won Junior Trophy for overall performance of young competitors.

Sterling Starr of Astro was third in overall standings for the top John J. Montgomery Trophy.

Twenty-eight glider pilots, many from General Dynamics divisions, competed in the soaring championships. Walt Mooney of General Atomic, was meet chairman, and Jim Spurgeon of GD/Convair, master of ceremonies.

Two Dynamics Men Star at Playhouse

Two General Dynamics men in the San Diego area were featured players in the Coronado Playhouse production of "The American Dame" which closed last week.

Peter Smith of Astronautics' Dept. 641-3 and Ira D. Sykes, assistant to the general manager of General Dynamics/Electronics, were the only male members of the five-person cast.

13-Year-Old Rescues Boy in Swim Pool

Crystal Wellington, 13, was an interested "student" swimmer last summer when her mother taught her some routine life saving holds. And it paid off recently when she was credited with saving a two-year-old.

Crystal is the daughter of Lorena Wellington of GD/Astro's Dept. 144-2.

She was playing near her home when a young boy rode his tricycle into the deep end of a neighbor's swimming pool. Crystal plunged in fully clothed and rescued the wet, but unharmed, youngster.

'Mutiny on Bounty' Tickets Offered

A limited number of tickets for a special performance of "Mutiny on the Bounty" starring Marlon Brando and Trevor Howard, are now being offered to General Dynamics folk at discount prices.

The film, nominated for seven Academy Awards including "best picture of the year," will be shown at Capri Theater, 3812 Park Blvd., at 2 p.m., April 7.

All seats are reserved, with loge tickets at $2 and general admission $1.60 — both 20 per cent savings of normal prices.

Tickets are available at employee services offices in Bldg. 8 (Astro site) and Bldg. 32 (GD/Convair Plant 1).

Toastmasters Club To Enter Speakers In Area Contests

Ray Sodomka and Bob Byron will represent Dynamic Toastmasters Club #457 in area speech contests to be held Friday (March 22) at Kings Inn, Mission Valley.

Byron will speak in the serious category, while Sodomka competes in the contest's humor classification.

The event, coordinated by Ed Wynn of the Dynamic group, will open at 7:30 p.m. Dinner is $3.50 per person.

At a March 7 meeting at Pernicano's, the club named Sodomka its new president, with Wynn, administrative vice president, and Irv Van Horn Jr., education vice president.

Other officers include Ken Jamrus, treasurer; Roy Kalanquin, treasurer; and Ernie Kling, sergeant at arms. All are GD/Astro employees.

The group is open to all General Dynamics men in the San Diego area, and meets each Thursday at 6 p.m. in Convair executive dining room, Pacific Hwy.

Management Clubs at both GD/Astro and GD/Convair encourage their members' participation by defraying a portion of Toastmasters fees.

Management Club Zone 'A' Bowlers Roll March 23-24

Both individual and team entries will be accepted through tomorrow (March 21) for the Management Club Zone "A" bowling tournament to be held March 23-24 at Clairemont Bowl.

The tourney is open to management clubs throughout the Arizona and Southern California area, and is being hosted by the GD/Astronautics club.

Fee is $20 per team.

Entries will be accepted by F. L. Erwin, ext. 3509, or Harry Lund, ext. 2601, both at the Astro site.

GD/E's Monty Walker Earns P.-T.A. Honors

Monty Walker of GD/Electronics Dept. 11-00 has been recognized for her years of service with boys' groups in the Fletcher Hills area by a life membership in the Fletcher Hills Elementary Parent-Teachers Association.

Mrs. Walker and her husband have devoted all their spare time the last eight years, while their sons have been growing up, to such activities as Little League and Pony League, Pop Warner football, Cub and Boy Scouts.

Mrs. Walker joined GD/Convair 11 years ago in plant engineering and transferred to GD/Electronics last summer in contracts.

Veterans Recall Fighting of 18 Years Ago During Bloody Invasion of Iwo Jima

Feb. 21 was more than just another date on the calendar to two General Dynamics/Convair men.

Every year on that day Al Zamora, hospital departmental assistant, and Bob Koser of motion picture lab meet for at least a few minutes to renew their memories of the fateful Feb. 21 night, 18 years ago, when both took part in the bloody Iwo Jima invasion.

Koser was grinding out shots of the battle from the decks of the Saginaw Bay as combat motion picture cameraman with Pacific Fleet Task Force 53.2, while Zamora, attached to Task Force 58, was busy treating wounded in the nearby Saratoga's hospital bay.

Saratoga's night fighters were protecting Saginaw Bay as it covered Marine landings.

The two discovered they were in the same action when Zamora was giving Koser his induction physical 9 years ago.



MEMORIES—Al Zamora and Bob Koser, both GD/Convair, review battle shots taken 18 years ago when both took part in fateful Iwo Jima landing, Feb. 21, 1945.

ARA-CRA Gardeners to Exhibit In Three Major Area Shows

General Dynamics gardeners have a busy month ahead as they groom prize flowers for three important shows in the San Diego area.

They are heading toward their own joint ARA-CRA annual Rose Show on Sunday, April 21, open to all General Dynamics people. Many intend to exhibit in the 17th annual orchid show sponsored by the San Diego County Orchid Society April 5-7 in Balboa Park's Conference Bldg. ARA Commissioner Everett Henderson is show chairman.

And, others of the garden groups will be displaying in the San Diego County Rose Society's show April 13-14.

ARA and CRA Garden Club members will meet in joint session April 3, 7:30 p.m., at the Floral Association Bldg., Balboa Park, to finalize plans for the annual Rose Show, said Henderson and CRA Commissioner Gene Zimmerman. Dahlia tubers will be available to interested members for the second time.

Please Don't Bring Children to Salvage

Alternating Saturday morning schedule for employee sales at the GD/Convair and GD/Astronautics salvage yards during the next four weeks is:

GD/Astro—March 23, April 6.

GD/Convair—March 30, April 13.

General Dynamics' families are urged not to bring children when shopping at either of the divisions' salvage yards to avoid risk of injury.

Style Show Features Dynamics People

Four General Dynamics/Astronautics employees will be featured April 3 when the San Diego Industrial Recreation Council (IRC) stages its "Profiles in Fashion" event at El Cortez Hotel's Caribbean Room.

Ray Mendoza of Astro, president of IRC, will serve as master of ceremonies and will appear as a singer during the entertainment portion of the show.

Darlene Elson and Jan Grier will be female models and Ludy Moeller, a male model during presentations of the latest in spring fashions.

Tickets, signifying a $1.25 donation, are now available through Astro's employee services office, Plant 71, and Convair employee services, Bldg. 32, Plant 1. The affair starts at 8 p.m.

Battlefield Communications To Be Subject of GD/E Paper

R. E. Thoman, manager of the digital communications section at General Dynamics/Electronics-San Diego, will present a paper on Digital Battlefield Communications before next week's 1963 international convention of the Institute of Electrical and Electronic Engineers.

The paper, dealing with a new concept in tactical communications developed in cooperation with the U. S. Marine Corps, is scheduled for the conference's Military Electronics session March 26 at the New York Coliseum.

The system includes use of a hand-held message generator about the size of a carton of cigarettes and about 4½ pounds in weight to transmit precise battle information to command posts.

The operator sets up the message on a message generator keyboard basing it upon field map grid coordinates. After checking the message, the operator presses the transmit button and the entire message is transmitted to the command post over standard field communications equipment. This does not interfere with normal voice communications over the same channel.

At the command post all messages are printed out on standard teletypewriters. Selected messages are automatically retransmitted to the next higher command. Communications containing geographically referenced data are automatically selected for presentation on a visual display where they are superimposed at the proper location on a standard field map. The visual display can store up to 512 targets and as many as 64 can be viewed at once.

The system is compatible with present USMC equipment and designed for expansion into systems under development. Techniques also are suitable to a wide variety of commercial and industrial applications.

Before joining GD/Electronics in 1958, Thoman supervised the design of the SAGE display console as supervisory engineer with Hazeltin Electronics Corp., N. Y., where he was employed from 1950 to 1956. He then joined Farnsworth Electronic Corp., Ind., as electronic engineer, designing such equipment as an electromechanical shutter for infrared detection, test equipment for barrier-grid storage tubes, and remote radar data display system using scan conversion tubes.

Gmyr's 78 Top Tourney Score

Stan Gmyr (Dept. 16) led the field as holder of low gross score in CRA golf play over Coronado course March 9 and 10.

Gmyr stroked a 78 in the 0-14 flight to top Russ Davis' 80. Davis is in Dept. 101.

Gene Pollpeter (Dept. 131) had first low net with a 69 and Ralph Way (Dept. 400), second, with a 71.

In the 15-21 flight Dick Latimer (Dept. 6) was first low gross with 79; Bob Fagan (Dept. 6), second low gross, 87. Bob Westbrook and John Sawicki, both Dept. 6, tied for first low net with 70s. A stroke behind was Al Ramirez (Dept. 131) with 71.

Leo McGinley (Dept. 171) was first low gross with a 92 in the 22-and-over handicap division. Craig Lent (Dept. 42) was second low gross with 94. Gene Thompson (Dept. 401) held first low net, 64; and Bill Dean (Dept. 97), second low net with 73.

Rae High-Point Fire Dept. Kegler

Hugh Rae was high-point kegler as GD/Convair fire department bowlers figured up their scores at the end of their Peterson Point League play the first of this month.

Rae scored 239.28 points. Ralph McConnell was second with 230.25 and Leo Slosser close behind with 230.17.

In Peterson Point bowling individual scores are kept on a point basis, with one point for each game won and a point for each 50 pins. The three top men received clock trophies furnished by the fire department and CRA.

Individual trophies, provided by Fire Chief Del Dimmitt, went to five other outstanding bowlers. Dimmitt was entitled to a trophy for his high scratch series score of 614. High scratch game of 257 was rolled by Slosser. Cecil Parker had high handicap series of 667; John Doughty, high handicap game, 264. Bob Purdy was tabbed most improved bowler.

Now, sports-minded firemen are swinging into summer league competition with five teams rolling Wednesday mornings or afternoons at Frontier Lanes.

They also are starting spring training for the coming plant "slow pitch" softball season.

Sports & Recreation

Plant Engineering Bowlers Tip Firemen in 'World Match'

Plant engineering bowlers proved themselves in a grudge match with GD/Convair fire dousers March 9 at Mission Valley Bowlero when they turned on the heat in the final game and ended the feud 104 pins in the lead.

Best five bowlers of the plant fire department challenged the top five of plant engineering to a "world championship" match, sending along a "stretcher" for the team, "headache pills," and even "crying towels."

Fire Chief Del Dimmitt kept heckling at high pitch throughout the afternoon as he sprayed CO^2 at each plant engineer who rolled a strike!

First game went to the bragging firemen, second to the plant engineers, so that they went into the third game even with 858 points. Plant engineering bowlers got hot in the third to win the series, 2599 to 2495.

Sam Qualiato, captaining the plant engineering team, had five strikes in a row to pile up high game score of 233. His teammate, Walt Goodman, had high series of 590. Others on the winning side were John Evans, Elbert Smith, and Bob Miranda.

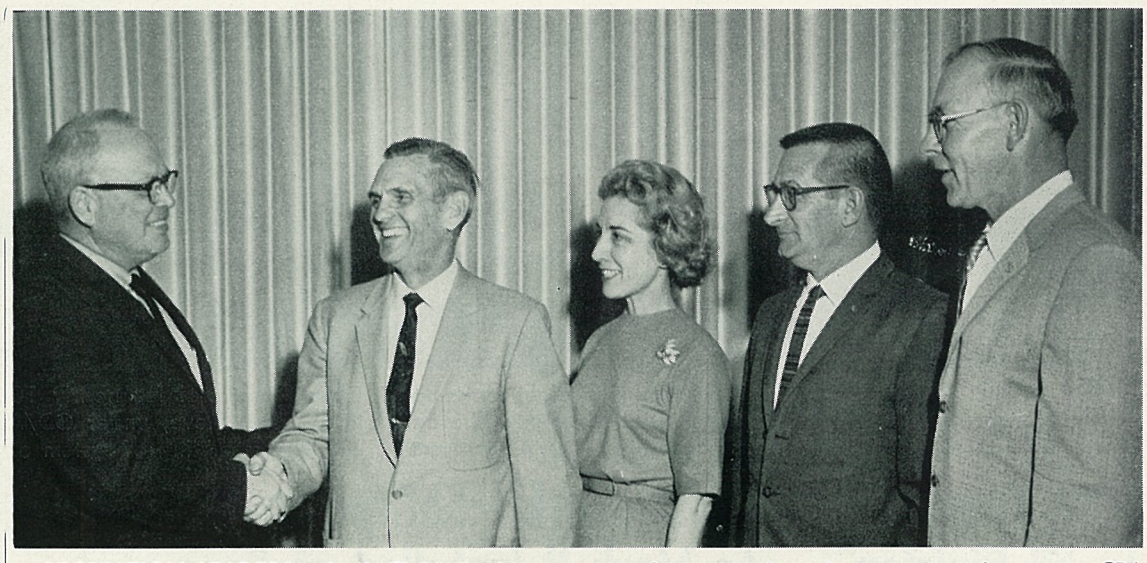
Dimmitt led his crew of Hugh Rae, Leo Slosser, Ralph McConnell, and John Doughty. Rae's score of 540 was high series for the firemen.

Williamson Tops CRA Pistol Shots

It was Joe Williamson "day" again in CRA Pistol Club competition March 10 when the perennial winner won both the .22-cal. Police Course and .45-cal. Short National.

His Police Course score of 295 topped Jim Halfacre's 288 and, in the Short National, Williamson went ahead of Halfacre (Dept. 140) again by seven points. Williamson (Dept. 401) shot a 268; Halfacre, 261.

Only change in the line-up was in third spot in both events. W. G. Walker (Dept. 6) had third-place score of 283 in the Police Course match and Ralph Picard of GD/Electronics was third in Short National with 243.



RECREATION LEADERS—J. K. Field (left), manager of personnel services, congratulates new CRA Council officers: Gerry Wright, president; Evelyne Thrall, secretary; Pete Beyrer, treasurer; Bob Menzie, vice president.

Model Railroaders To Fete Pasadena

CRA and ARA model railroaders are busy with plans for entertaining the Pasadena Model Railroad Club with a special evening of operations at the House of Charm, Balboa Park.

Karl Busch, GD/Convair Dept. 16, past president of the San Diego Model Railroad Club, with which CRA-ARA groups are affiliated, is heading up arrangements for the March 30 affair. Local modelers have invited the Pasadena group to bring their own HO and O gauge equipment.

Gerry Wright Elected New President of CRA

Gerry Wright will head GD/Convair and GD/Electronics recreational activities for the next year as president of the Convair Recreation Association Employees' Council.

Elections March 4 saw two other officers returned for a second term and a new vice president chosen.

Council members elected R. W. Menzie vice president; and renamed Pete Beyrer, treasurer, and Evelyne Thrall, secretary, by unanimous decision.

Wright, who served as vice president last term, succeeds Joe Harris, president of the Council during the 1962-63 term.

He joined GD/Convair in 1942 in engineering. He is a schedules engineer, now assigned to estimating. Wright has been active in the CRA Sports Car Club since it was organized nine years ago and has served as CRA commissioner of the group since 1956.

Menzie has been commissioner of the CRA Fishing Club since 1959 and a member of the group since it was formed as a CRA activity in 1949. He has also been GD/Convair's delegate and held offices on the San Diego County Wildlife Federation. Both he and his wife are ardent fishermen.

He has been with GD/Convair experimental department since joining the company 23 years ago.

Beyrer has been directly connected with CRA activities since the Convair Recreation Association was organized within the division in 1949. At that time he was assigned to employee services section as CRA representative. He has been with the company since 1940.

Mrs. Thrall joined GD/Convair in 1956 in payroll section. The last three years she has been CRA accountant in the employee services section.

Installation of the new CRA Council officers will be held April 20, according to J. K. Field, manager of personnel services, who directs the operation of recreational activities for the GD/Convair and GD/E divisions.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions each Saturday, 7 a.m. to noon, Clairemont Mesa flying site. Annual Free Flight Flying Scale contest April 6-7. Call Don Larson, ext. 2289, or Larry Peterson, ext. 1477, both Plant 1, for details.

BOWLING — Registration now open for annual CRA plant championships, April 20-21, 27-28. Entry blanks at local bowling alleys or CRA office, Bldg. 32, Plant 1.

BRIDGE CLUB — Weekly sessions each Wednesday, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master Points night March 27.

COIN CLUB—Regular meeting tomorrow (March 21), 7:30 p.m., Convair cafeteria main dining room, Pacific Hwy.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Joint CRA-ARA meeting April 3, 7:30 p.m., Floral Association Bldg., Balboa Park.

GOLF — Entries open March 21-29 for CRA tournament at Carlton Oaks, April 13-14. Call ext. 1705, Plant 1, for starting times.

ICE SKATING — Regular Thursday ice skating sessions for General Dynamics people Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children under 12, 20¢.

PISTOL CLUB — Next shoot March 24, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (March 21), 8 p.m., Harbor Drive club headquarters.

RIDING CLUB — April Fool's dance March 30, Gillespie Field Clubhouse.

ROAD RUNNERS — Meeting tomorrow (March 21), 7:30 p.m., Gillespie Field Clubhouse. Border District Trailer Rally, Blair Valley, Anza-Borrego Desert area, April 5-7.

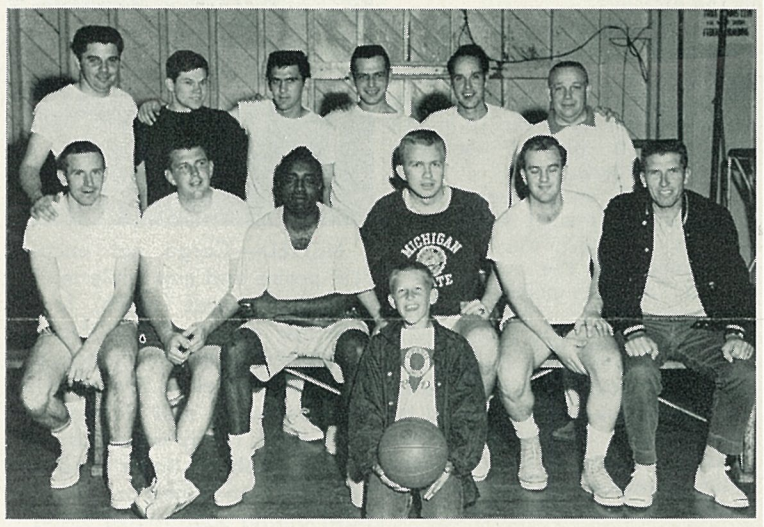
TROPICAL FISH CLUB — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

VOLLEYBALL — Register men's teams for IRC tourney with Pete Beyrer, ext. 1245, Plant 1.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

RUNNERS TO LAY PLANS FOR RALLY

Road Runners will finalize plans at tomorrow's meeting for their participation in the coming Border District Trailer Rally April 5-7 in the Anza-Borrego Desert area.



PLANT CHAMPS—GD/Electronics ball tossers who took champ title in CRA plant basketball league are: front row (left to right), Dick Fenton, Keith Cook, Huey Crawford, Jerry Elder, Norman Dahl, Manager Harry Van Buren with son, Harry Jr., holding ball. In back (left to right) are Ken Farnsworth, Les O'Neil, Eugene Dowdle, Gil McCoy, Dee Trepanier, Tom Morris, business manager.

GD/Electronics Wins Plant Title, Downing Thirty-Niners in Finals

GD/Electronics triumphed over Thirty-Niners to win plant basketball championship title in a hard-fought battle on Muni Gym courts last Tuesday night.

GD/E barely nosed out the second-round winners by a two-point lead to take the final playoff, 30-28.

The previous week, March 5, GD/Electronics boys swept by Electronics in a 53-24 game to establish themselves as firm winners of the first-half of league play. The two teams ended the first round tied at 6 won, 1 lost.

A smorgasbord trophy dinner will honor the champ team some time before the end of the month, said Pete Beyrer of CRA office. CRA will provide awards.

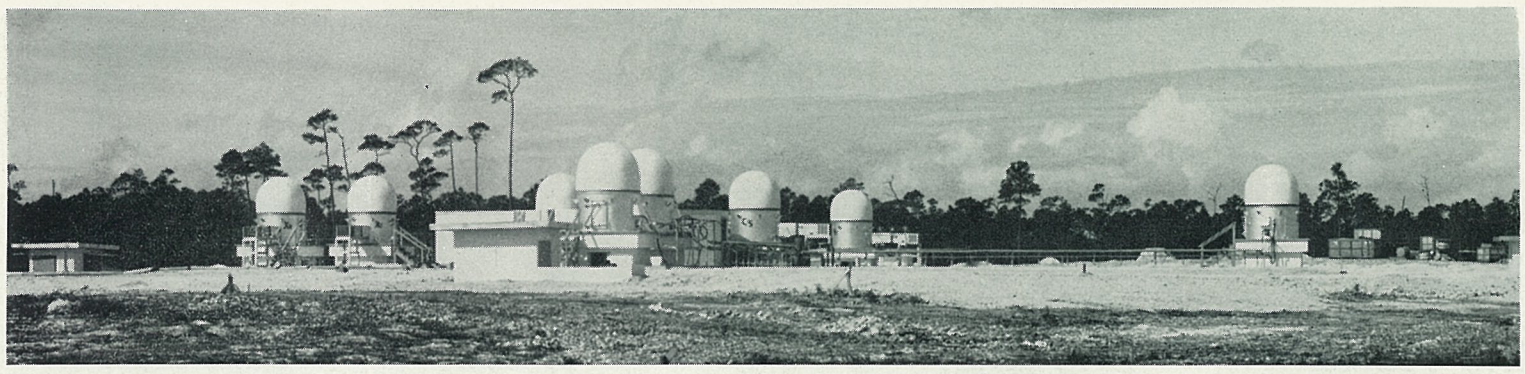
Starting Times Given For CRA Golf Tourney

Registration opens tomorrow (March 21) for next CRA links tourney at Carlton Oaks course, April 13-14.

CRA Commissioner Ken Wulfemeyer said that starting times will be given on a first-come basis until entries close on March 29. Call ext. 1705, Plant 1.



RALLY-RAMA—Candid shots snapped by GD/Convair's Howard Harvey at annual CRA Sports Car Club's "Seat of Pants" rally show (right) registration desk with Tom Keinholz (GD/Convair Dept. 6) putting together "starting package" containing dash plaque and general instructions for contestant. John McKay (Dept. 27-1) and Miles Nesman of GD/Astro assist. In left photo Bill Stemple of Dept. 6, with flag, starts car No. 1 on 100-mile backcountry trip. Standing beside Stemple are Jim Hamill of GD/Electronics (left) and Bill Helmich (Dept. 6) who gave out route instructions to each car one minute before departure. Center is shot at check point No. 2 with Blanch Pesek tracking through mud on rain-swept course to give recorded times to drivers. Eloise Riggs, Al Oehler (GD/Convair Dept. 131) and Bill Pesek of GD/Astro record entry times at check point. Rare San Diego downpour dampened highways, left participants' spirits high.



NEW HOME — Forest provides backdrop for eight antenna domes of Azusa Mark I tracking system installed at new site on Grand Bahama Island. System was moved by GD/Astro from Cape Canaveral for nearly 10 per cent less than original contract price. Move, under GD/Astro team, began in fall of 1961 with disassembling of system at Cape.

Wise Transfers To EB Division

W. E. Wise, manager of industrial engineering at GD/Convair, has transferred to GD/Electric Boat division in Groton, Conn., as manager of management engineering, a new post.

Wise, a native of Colorado, joined GD/Convair engineering department in 1950 and has held responsible positions as test lab group engineer, chief of applied manufacturing research, chief industrial engineer. He was appointed manager of resources engineering early last year.

W. R. Bruce, GD/Convair director of operations, in making the announcement of Wise's transfer, said industrial engineering activities have been realigned.

R. C. Hartwig, chief of systems and procedures and data processing, and Vern Sharp, chief of plant engineering, now report directly to Bruce.

R. D. Marks, chief of methods and applied manufacturing research, reports to Sharp.

HORNE IN WASHINGTON FOR ANNIVERSARY

C. F. Horne, General Dynamics/Pomona president, was in Washington, D.C., during early March to attend 50th anniversary celebration of the formation of U.S. Department of Labor. Horne attended as president of the EIA.

Azusa Mark I Shifted to GBI As Mark II Installed at Cape

Final figures are now in from a "king sized" moving operation begun more than a year ago by General Dynamics/Astronautics.

This was the shift of GD/Astro's Azusa Mark missile tracking system from Cape Canaveral to Grand Bahama Island, British West Indies.

The move was accomplished for nearly 10 per cent less than contract price. And, to this can be added savings of several million dollars: Mark I was moved and updated for about one-fourth the cost of a new system!

Air Force decision to move Mark I to GBI was motivated by two factors.

First, an improved Azusa Mark II tracking system was already installed and operating at Cape Canaveral.

Second, a need was seen for a backup system down the Atlantic Missile Range which could assure continuous flight path, trajectory and position information.

(Solid propellant rockets leave an exhaust residue which can obscure radio signals from a system directly behind the missile. A secondary tracking system at a different angle to the flight path overcomes this obstacle.)

In late October 1961, a GD/Astronautics team began disassembling Mark I for the move under direction of D. C. Prim, now manager of trajectory measurement and control; T. H. Scholder, assistant GLOTRAC program director; L. F. Bell, assistant GLOTRAC project director; and H. L. Copeland, chief of ground tracking.

Transported by ship and aircraft to a two-acre site near Freeport, GBI, the system was reassembled and modified to improve its performance.

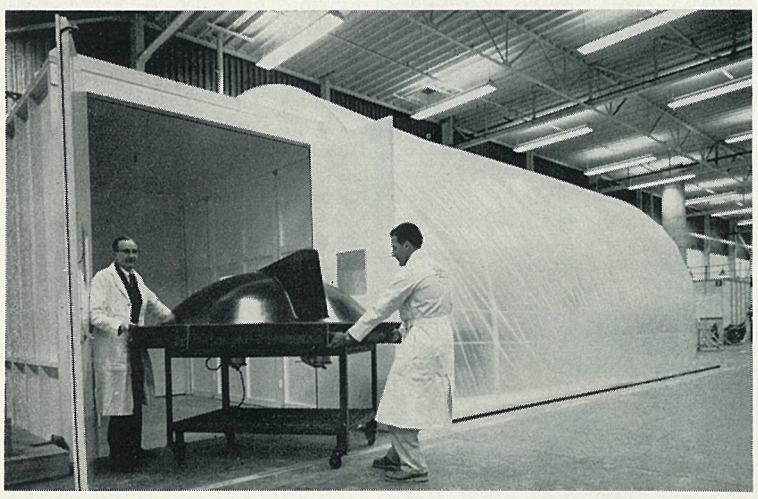
Unit leaders for the move were GD/Astro's H. A. Vasques, J. A. Moody, G. W. Moses and W. D. Buniger, while others involved in the project included D. D. Greenwood, M. Huff, M. Martinez, J. J. Heilman, S. R. Zanin, A. R. Evans and L. A. Allen.

Technicians H. B. Jenkins, Gene Swindel, C. G. Skeen and C. F. Borchert also played key roles.

Other members of the GD/Astro team were R. A. Harwood, T. B. Field, J. H. Getz, E. O. Campbell and E. F. Knettle, working under G. T. Herring, now chief of mechanical packaging design, who handled the engineering drawing and release function.

System integration and design, under N. L. Lawhead, chief, concentrated on theoretical analysis and overall system design, with engineers including L. G. Karel, E. J. Matson, V. J. Poehls, C. H. Burnes, J. D. Knoner and P. D. Adams, participating.

The late C. W. Kushera was off-site coordinator for the Azusa Mark I move.



MOVING OUT—Alan Fullarton and Ralph Mansfield wheel part from GD/Astro "balloon room" after fabrication in dust free, environmentally controlled area. Parts move through large air lock shown here. Smaller lock on other end of balloon affords personnel access.

Whoosh, Whoosh! Lo and Behold You've Blown a Plastic Room

It may start a trend in "inflate-it-yourself" construction!

In any case, a huge "balloon room" at General Dynamics/Astronautics provides a dust-free, temperature and humidity-controlled environment for metal bonding, and for fabricating reinforced-plastic, sandwich-constructed missile and space vehicle parts.

The "balloon" is a huge sheet of reinforced plastic film, which, when inflated, forms a room 30 feet long, 20 feet wide, and 15 feet high. Its length could be doubled easily and economically, if desired.

There is no internal supporting structure. Air pressure (as little as a half-pound) prevents the thread-reinforced polyethylene and Mylar film walls from collapsing.

Positive internal pressure is supplied by a special blower system which also filters dust from the air, and is maintained by twin-doored air locks at either end which provide access to the room.

Ends of the plastic film are attached to semi-circular faces on the air locks, while water-filled compartments at the bottoms of the walls hold the room in place. The floor inside is coated with dust-inhibiting plastic.

As an added feature, the room is "portable." Air locks are demountable, and inflating the balloon is a simple procedure. An ordinary window-type air conditioner maintains and controls temperature inside.

Plaster, plastics and foundry (Dept. 454) employees who use the facility are under direction of foremen W. R. Walker and G. L. Olson. Al Stebbins, Joe Ortega, John Treat and R. C. Christopher are assistant foremen.

Alan Fullarton, tool design analyst, is "father" of the creation.

Special F-102s Set For Test

Two specially-instrumented F-102s, equipped with GD/Convair-designed and installed photographic and test instrumentation, will be put to work next month as they are drawn into an evaluation of the Air Force Systems Command's new mobile air weapons control system.

Already, other F-102s from Tactical Air Command and Air Defense Command are flying over North and South Carolina in mock intercepts in a six-month program to test the system, known at 412L.

The air weapons control system, developed by AFSC's Electronic Systems Division, Hanscom Field, Mass., is designed for use outside the continental United States to provide control of fighting forces. The mobile control package can be disassembled and transported anywhere in the world by truck or cargo aircraft in contrast to the SAGE system, permanent installation for directing the air defense of continental United States.

The two instrumented F-102s have pilot-panel instruments located in the missile bay, along with a camera to record photographically what the aircraft actually does under test directions. Installation of photographic and test instrumentation was done at GD/Convair's San Diego facility last fall under a contract from Electronic Systems Division.

From the photographic record and other facts gathered at test sites, the Joint Test Staff, including AF personnel from various commands and contractor representatives, will test and retest the system's abilities and possibilities.

'Commonality' Emphasized in Bid For F-111

(Continued from Page 1)

suspicious that it might not get all it wanted in the way of a TFX if Boeing got the contract.

"The Navy has no 'family relationship' with Boeing such as it had with Grumman," the article continued.

"GD's alliance with this 'Navy company' was of tremendous importance in view of the final result," the article stated. "It now had a partner whose planes had made more than half of all the takeoffs and landings on carriers. Moreover, the Navy knew that, with Grumman in the deal, there would be a concerted effort to meet naval requirements."

Evolution of the F-111's revolutionary variable wing is traced in the article.

Also traced in some detail is the early competition with nine airframe companies and three engine manufacturers, and finally action leading up to the 10-month "sudden-death playoff" between the two finalists.

"The TFX story began as a gleam in the eye of Gen. F. F. Everest, in 1959 the incoming commander of the Air Force's Tactical Air Command," the article reported.

A plane with low-level supersonic capability ready to meet the "new and tougher" conditions of the mid-sixties was envisioned by the general. Because of the limited number of airfields that could accommodate TAC's hottest fighter, the general called for a new fighter that could: land and take off on sod fields and runways far less than half the length necessary today; fly to Europe non-stop; dash in at tree-top level at 1,000 mph; and "loiter" at subsonic speeds for reconnaissance and ground-support missions, the article said.

By March 1960, John Stack, then assistant of NASA's Langley Research Center, advised Gen. Everest that the variable-wing configuration was feasible.

Finally, in October 1961 the Department of Defense issued its request for proposal and its specifications for bids on the TFX.

By the deadline on Dec. 6, the article continued, the "compromises and intricate strategies" had been synthesized into printed proposals typically 1,500 pages long and five feet in height. On Jan. 24, the Air Council, plus the Navy's representative met to consider the source selection board's vote, and a run-off was recommended. The Air Council proposed the eight-week extended competition between Boeing and GD-Grumman.

"Ahead, as we shall see in Part II," the article stated, "lay not eight weeks but 10 months of savage competition, important breakthroughs in design technology that brought GD-Grumman forward fast."



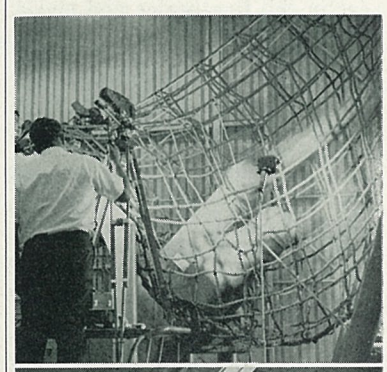
"He was the cutest bundle of pink when I picked him out for a pet."

Probe Fired Into Net in Test Series

GD/Astronautics engineers have improved the launcher cap design for FLIP (Flight Launch Infrared Probe) and checked it out in sample firings at Plant 1 dynamics test laboratory, San Diego.

FLIP (**General Dynamics NEWS**, Feb. 6, 1963) is designed for in-flight launchings from space boosters to study missile trails.

To insure that the launcher cap and plug do not deflect the probe during firing, engineers found that the simplest method works best, according to D. D. Menz, Dept. 568-3 senior test lab engineer in charge of mechanical design of support equipment for the program.



NETTED—Cargo net encases FLIP probe and cap while motion picture cameras catch faster-than-eye action during high G tests proving out launch cap and plug design. Below, dynamics test lab engineers, Will Hosmer and Larry Beck, ready probe as cameramen Robert Koser and Bill Stillman set cameras. Above, flash during split-second firing is caught on film by lensman Pete Autio.

Using a short cable to connect the glass-covered foam plug to the aerodynamically-designed cap, the plug is shot out of the way of the probe's line of flight.

A novel test setup involving a heavy cargo net was created to economically test the new configuration. It performed perfectly in 25 captive firings at high G forces simulating actual rocket thrust.

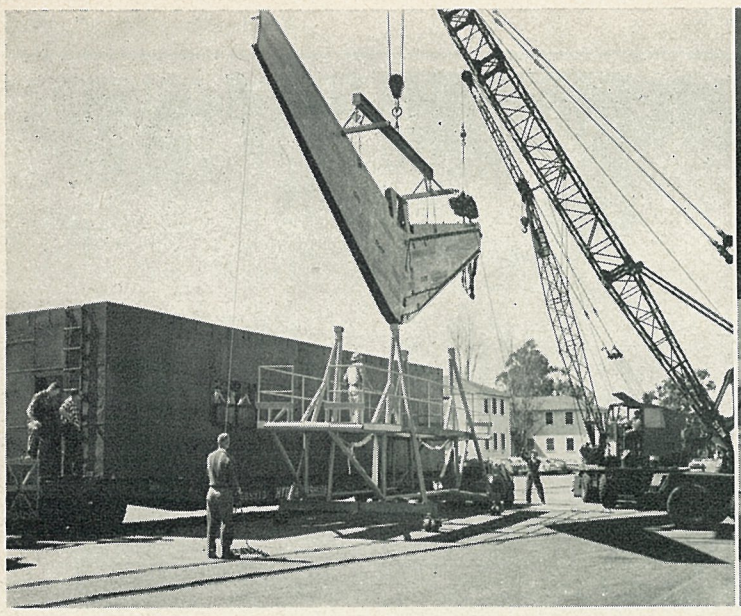
A two-section cargo net, padded at one end with canvas, caught both the cap and probe so they could be used over and over again to prove out the new, and simple, design theory.

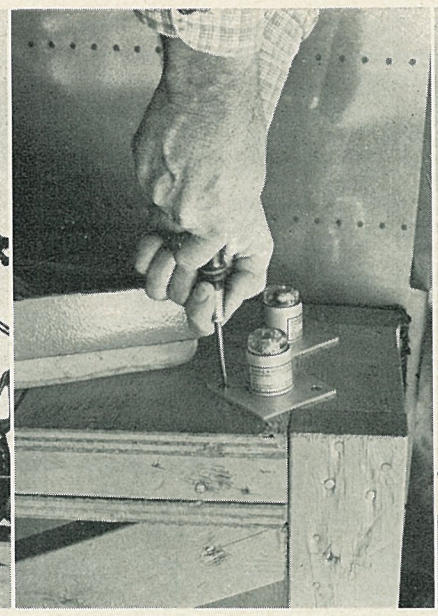
Movies of the firings and cap ejections and data on amount and duration of force captured on the Memoscope, also photographed during tests, allowed dynamics test lab engineers to clearly observe clearance of the joined cap and plug, angle of departure of the cap relative to the probe's bumper assembly.

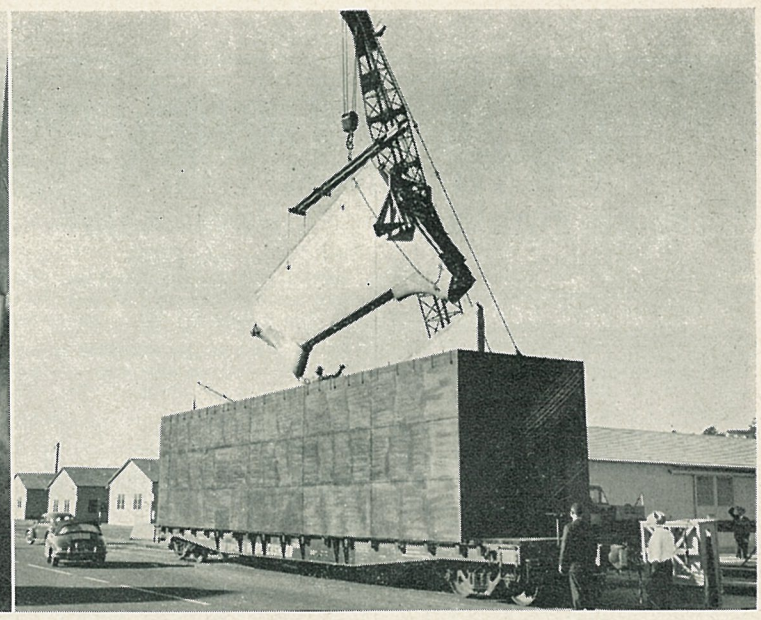
Engineers pointed out that such detailed information could never have been obtained in actual test firings and components certainly never could have been recovered for evaluation.

STUDENTS HEAR SCIENCE TALK

Students at Lincoln High School heard General Atomic's Dr. Wayne E. Bell describe "The Role of the Chemist in the Nuclear Reactor Field" at a "Meet the Scientist" lecture in SD.







CUSHIONED LOAD—Horizontal and vertical stabilizers of first C-141 empennage built at GD/Convair for AF jet cargo plane are carefully swung into specially-constructed car for crosscountry trip to Lockheed-Georgia Co., Marietta, Ga. Shot in center shows technician affixing GD/Electronics-manufactured Shockmasters, shock indicating devices, which went on parts and fixtures to record loads received during journey.

GENERAL DYNAMICS

NEWS

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

Vol. 16, No. 7 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, April 3, 1963



EENIE-MEENIE—Shirley Callard (Dept. 43) has a hard time making up her mind between Management Club prexy candidates Joe Williamson and Ralph Montgomery as she marks ballot for club election. Ballots must be turned in by April 11. Election returns will be disclosed at April 17 meet.

Mgt. Club Will Receive Stock Market Pointers

Management Club members have a full evening planned for their edification April 17 when they will get pointers on the stock market and have a chance to become shareholders in their own right, if they are lucky.

Harry B. Esky, regional sales manager of Dreyfus Corp., investment company, will discuss stocks and bonds, with special emphasis on mutual fund investments.

And, actual shares of stock in going concerns will be handed out as prizes during the drawing, said R. J. Haney, general chairman for the sponsoring industrial engineering department.

Winner of the 1962 President's Award, top cost reduction honor, will be disclosed during the meeting at the Copper Penny Restaurant in College Grove Shopping Center.

Five GD/Convair people are in the running for the award: Nick Kosmas (Dept. 34), C. D. Dismuke (Dept. 27), R. L. Mellison (Dept. 34), Mattie C. Ross (Dept. 26), and W. R. Holmes (Dept. 48).

The winner receives an individual bronze plaque and has his name engraved on a similar per-

(Continued on Page 2)

Budros Named To Corporate Ind. Rel. Post

James L. Budros, who has spent more than 20 years in industrial relations work with General Dynamics Corporation, has been appointed director of compensation and personnel development for the company, Algie A. Hendrix, vice president-industrial relations, announced this week.



J. L. Budros

Budros had been manager of employee and labor relations at General Dynamics/Astronautics in San Diego. He joined Convair in 1942 as a safety engineer and held a number of industrial relations posts before being appointed chief safety engineer at the Fort Worth plant in 1948.

Named personnel manager at Fort Worth in 1953, Budros returned to San Diego in 1960 as assistant to the Convair vice president of administration. He served as corporate director of personnel administration from 1961 until his appointment to the Astronautics post in April of 1962.

A graduate of San Jose State College, Budros did graduate work at Stanford University Graduate School of Business.

First Empennage Reaches Marietta

First C-141 empennage built at General Dynamics/Convair rolled into Marietta, Ga., last week after a seven-day and 2,500-mile rail trip across the United States in its own custom-built car.

The static test article, first empennage delivered to Lockheed-Georgia Co., prime contractor on the Air Force jet cargo plane, moved out of San Diego right on schedule March 21. It had been secured and ready for shipment at the Marine Corps base loading site two days ahead of time.

Three months of planning and work had gone into first shipment and a number of GD/Convair functions had a hand in the operation.

Vertical and horizontal stabilizers were tucked carefully and securely into the steel-hooded 60-ft. flat car, especially constructed for the purpose. Southern Pacific provided the basic hydra cushion flat car and coordinated its part of the modification, under direction of GD/Convair, in the railroad's San Diego yards.

Three wells, about 20 inches deep, were built in the floor and three cupolas, or caps, on top allowed 19 inches more room to take care of the tips of the wide stabilizers, which stretched 19 feet high.

A steel hood, covering 53 feet of the car's length, was built in three sections to facilitate removal of the parts at their destination. The hood was attached to the 11-ft. high steel sides enclosing the entire bed.

A special shock-mounting system of fixtures was designed by packaging design and control group of shipping under direction of J. J. Janssen who was responsible for overall design of the car and fixtures, subject to approval by Lockheed and GD/Convair engineers. Steel, rubber-lined pillow block arrangements on top of the steel fixtures supported the wooden and steel cradles holding the stabilizers to cushion them against shock en route. And, shock indicating devices, manufactured by GD/Electronics-San Diego, were attached both to fixtures and parts to record loads encountered in transit.

The car, only one of its kind, has a turn-around time of 20 days, allowing 16 days for the round trip and two days at each end of the line for loading and unloading, so that it can be back at San Diego in plenty of time for the next C-141 empennage shipment. First production article is due to move out of GD/Convair bound for Lockheed's Georgia facility on April 18.

A second flat car, originally designed for delivery of 880 and 990 jet transport parts, carried the C-141 rudder, elevators, leading edges, and other parts. It was loaded at Plant 19 (formerly Plant 2) and coupled to the stabilizer car at the railroad yards.

Traffic department, under Jack Sheldon, coordinated arrangements with the railroad and laid out alternate routes crosscountry to allow plenty of clearance for the high car.

Transportation operations, directed by B. R. Hisaw and Ralph Montgomery, hoisted the large parts into the cars during the three-day loading job.

Other plant functions involved in the project included tooling which built the steel fixtures, and plant engineering which fabricated the steel hood cover.

J. M. Adamson, C-141 program manager at GD/Convair, headed a group greeting the empennage upon arrival at Marietta. Included among the GD/Convair contingent were Don Stewart, C-141 contract administrator; R. W. Miller, C-141 project engineer, accompanied by two others from engineering, W. J. Wood and E. E. Benson; H. B. Rogers, chief of program estimating; C. M. Gauss, chief of production estimating; and Janssen.

Dynamics Working Capital Up, Bank Borrowings Decline

Consolidated net income of General Dynamics Corporation in 1962 amounted to $52,858,645, equivalent to $5.29 per common share, Roger Lewis, president, disclosed last month in the corporation's annual report.

The figure was slightly more than a preliminary estimate released earlier (**General Dynamics NEWS**, Feb. 20, 1963).

The net income compared with a consolidated net loss of $143,-203,459 reported in 1961.

Lewis pointed out that because of the 1961 loss carry forward, no federal income tax has been charged. Without the benefit of the 1961 loss carry forward, consolidated net income would have approximated $29,009,000, or $2.90 per common share.

Consolidated sales of the corporation in 1962 were $1,898,-481,708.

Lewis reported that during 1962 consolidated short-term bank borrowings declined from $169,-171,264 at the end of 1961 to $90,044,119 in December, 1962. During the same period, working capital increased from $49,721,947 to $128,144,701.

As of Dec. 31, 1962, Lewis reported the total business backlog was $2,065,000,000. The Dec. 31, 1961, backlog was $1,700,000,000.

Model Making Breakthrough Helped GD-Grumman TFX Bid

General Dynamics-Grumman won the F-111 contract because of a higher degree of commonality and the greater likelihood that it would produce the plane on schedule and within the funds earmarked for it.

These facts were pointed out in the second and final installment of Richard Austin Smith's article, "The $7-Billion Contract That Changed the Rules," appearing in April issue of Fortune magazine.

The article traces the "12-week" runoff between General Dynamics and Boeing that stretched into "ten months of backbreaking competition," climaxed by the decision in favor of Dynamics.

Convinced that both finalists met both Air Force and Navy design requirements in the final round of competition, Secretary of Defense McNamara turned his attention to a "point-by-point" comparison on cost, commonality and design, the article stated.

The military evaluation group's opinion was that Boeing was "in effect, proposing two different

(Continued on Page 3)

Families Get View Of Little Joe II

Several hundred wives, children, and guests of GD/Convair people working on the Little Joe II program viewed the assembled launch vehicle positioned on its launcher at a special open house last Saturday afternoon (March 30).

J. B. Hurt, Little Joe II program manager, said that the vehicle was left set up in the experimental yard over the weekend so that families could see what the actual article looks like as a token of appreciation for the excellent performance of everyone involved.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period April 1 through April 15.

Twenty-year: Dept. 6, J. A. Harris, E. L. Moore, J. C. Sproat; Dept. 16-1, C. E. Correll; Dept. 48-63, A. J. Pommier; Dept. 91-1, F. S. Hurst; Dept. 129, D. G. Cobb; Dept. 133, A. F. Post; Dept. 140, G. F. Reutlinger; Dept. 171, R. A. Reynolds, W. A. Simon.

Fifteen-year: Dept. 3-1, C. M. Durst; Dept. 27-6, Dorothy D. Beard; Dept. 48-90, P. H. Selby; Dept. 128, Lora G. Rodriguez; Dept. 140, J. W. Choate, J. J. Manning.

Ten-year: Dept. 16-4, W. W. West; Dept. 97-4, K. C. Cummins; Dept. 115, R. J. Seary; Dept. 400-3, E. A. Roakes; Dept. 401-9, E. E. Madrid.

HOLLOMAN AFB

Ten-year: Dept. 313-6, G. N. Rhodes.

GD/ELECTRONICS

Twenty-year: Dept. 72-00, E. J. Elie.

Ten-year: Dept. 34-00, C. L. Hodges; Dept. 71-00, G. W. Winchell.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending March 15 and March 22.

Dept. 101: C. V. Beeson, $45; J. H. Hammer, $98.20 (final payment).

Dept. 128: V. C. Breit, $35.30; R. F. Lanzo, $50 (partial payment); R. B Walling Jr., $12.60.

Dept. 129: B. F. Arnas, $50 (partial payment).

Dept. 131: L. Castro and R. J. Larson, $15 each (joint award); R. W. Menzie $30.80.

Cost Improvement Proposals for the same periods:

Dept. 29, G. A. Papa.

Dept. 91, E. V. Torp.

Retirements

CONVAIR

ALBORG—Edward E., Dept. 25. Seniority date Aug. 6, 1946, retirement effective March 15, 1963.

ASLETT—Frederick, Dept. 215. Seniority date Oct. 13, 1953, retirement effective Jan. 23, 1963.

BARRY—Robert L., Dept. 218. Seniority date June 15, 1950, retirement effective Jan. 13, 1963.

CASH—Walter D., Dept. 223. Seniority date June 20, 1950, retirement effective Jan. 11, 1963.

COLE — Carl J., Dept. 99. Seniority date Dec. 20, 1946, retirement effective Feb. 18, 1963.

DENMARK—Russell L., Dept. 14-00. Seniority date Sept. 22, 1947, retirement effective March 15, 1963.

ELDER—Alfred A., Dept. 48-05. Seniority date Aug. 21, 1950, retirement effective Jan. 6, 1963.

FRANKEL—Salo L., Dept. 48-05. Seniority date March 21, 1951, retirement effective Jan. 6, 1963.

JANSEN—Elbert E., Dept. 148. Seniority date Nov. 28, 1951, retirement effective March 15, 1963.

KERBY—Carroll M., Dept. 140. Seniority date Aug. 4, 1942, retirement effective Feb. 18, 1963.

LARSON—Carl A., Dept. 218. Seniority date June 28, 1950, retirement effective Jan. 9, 1963.

NEWMAN—Virginia C., Dept. 292. Seniority date Dec. 8, 1955, retirement effective Dec. 20, 1962.

NIMESGERN—Joseph E., Dept. 146. Seniority date Jan. 8, 1952, retirement effective Dec. 8, 1962.

SCHAEFER—Clayton H., Dept. 129. Seniority date July 11, 1950, retirement effective Dec. 30, 1962.

WOLFE—John S., Dept. 21-1. Seniority date Jan. 22, 1951, retirement effective Jan. 6, 1963.

Rider-Driver

CONVAIR

RIDE WANTED—7 a.m. to 3:30 p.m. from area of Grossmont Shopping Center to Plant 1. Frank Pease, home phone 463-4532, or plant ext. 2336.

RIDER WANTED—7:30 a.m. to 4 p.m., from Chase and Avocado, or Washington and Magnolia, in city of El Cajon to Plant 1. Walter Guy, home phone, 444-2728, or plant ext. 2743.

Deaths

CONVAIR

PRAFKE—Ervin G., Dept. 401. Died March 20. Survived by wife, Lucille; son, Roger E. Prafke, (Dept. 115); daughter, Mrs. Barbara Mitchell; and five grandchildren.

Promotions

CONVAIR

Promotions to or within supervision effective March 11.

Dept. 6-2, Engineering: To product support group engineer, S. E. Beemer.

Dept. 97-3, Estimating: To spares estimating asst. supervisor, W. Minando, J. J. Shults.

Dept. 131, Experimental: To assistant foreman, A. C. Oehler.

ADVANCED PRODUCTS

Dept. 986-1: To chief engineer, M. Chanin. To project engineer, A. F. Stratton.

GD/ELECTRONICS

Dept. 74-10, Production Engineering: To advanced planning supervisor, G. D. Patrick.

Personals

CONVAIR

We deeply appreciate the kindness and sympathy shown us in our recent loss.
Mrs. Harvey A. Brown and family.

* * *

My grateful thanks to those Convair friends who were so kind and thoughtful at the death of my husband, John Crousen.

Vera Crousen.

Boosters Named For Mgt. Club

Information on Management Club activities, and tickets, are available to all eligible GD/Convair and GD/Electronics men and women through 20 club "boosters" located throughout GD/E and GD/Convair Plant 1 and Rose Canyon facilities.

Every booster salesman tries to contact each member, or potential member, in his area every month to outline coming activities and make tickets available. However, since this personal contact is not always possible, said G. A. Couchman, ticket chairman, boosters urge members to call them at any time. Club contacts also welcome individual suggestions for interesting programs. These are passed on to the club's board of control for review in arranging the agenda for the year.

Boosters, their departments, locations, phone extensions are: Couchman (Dept. 101), Bldg. 5, ext. 1631; B. W. Campbell (Dept. 23), Bldg. 7, ext. 1640; C. B. Robinson (Dept. 15), Bldg. 4, ext. 2898; John Hinton (Dept. 91), Bldg. 8, ext. 1171; M. C. Tombler (Dept. 6), Bldg. 5, ext. 1831; R. W. Chambers (Dept. 42), Bldg. 1, ext. 2714; A. M. Van Horn (Dept. 400), Bldg. 1, ext. 1095; Jack Vint (Dept. 25), Bldg. 7, ext. 411; H. W. Rubottom (Dept. 3), Bldg. 14, ext. 2568; Carl Uhl (Dept. 171), Bldg. 3, ext. 2642; G. R. Bailey (Dept. 48), Bldg. 33, ext. 778; D. L. Macey (Dept. 42), Bldg. 5, ext. 583; Frank Stevens (Dept. 171), Bldg. 4, ext. 1352; Ed Rice (Dept. 133), Bldg. 4, ext. 1679; Jack Benedict (Dept. 141), Bldg 2, ext. 1141; Gerry Cox (Dept. 101), Bldg 1, ext. 1650; C. S. Strand (Dept. 131), Bldg. 5, ext. 1324; Herb Day (Dept. 16), Bldg. 5, ext. 2730; C. W. Glasgow (Dept. 14), Rose Canyon, ext. 2269; GD/Electronics contact—Kent Sinclair (Dept. 32-00), Bldg. 51, ext. 2212.

Mgt. Club to Receive Stock Market Pointers

(Continued from Page 1)

petual plaque in the division president's office. He also receives a certificate facsimile and a $250 merchandise gift of his choice.

Management Club election returns also will be announced following tabulation of ballots which must be returned to J. L. Terrien, nominating committee chairman, by next Thursday (April 11).

MacSave-it awards for February and March and Mug of the Month will be presented.

Social hour begins at 5:30 p.m. followed by a 6:30 dinner. Tickets, at $2.75 each, now are available to GD/Convair and GD/Electronics members at regular ticket outlets.

General Dynamics NEWS

Published by General Dynamics Corporation, One Rockefeller Plaza, New York 20, N. Y.; with editorial headquarters at San Diego 12, Calif., P.O. Box 1950, telephone 296-6611, ext. 1071, Logan Jenkins, editor-in-chief.

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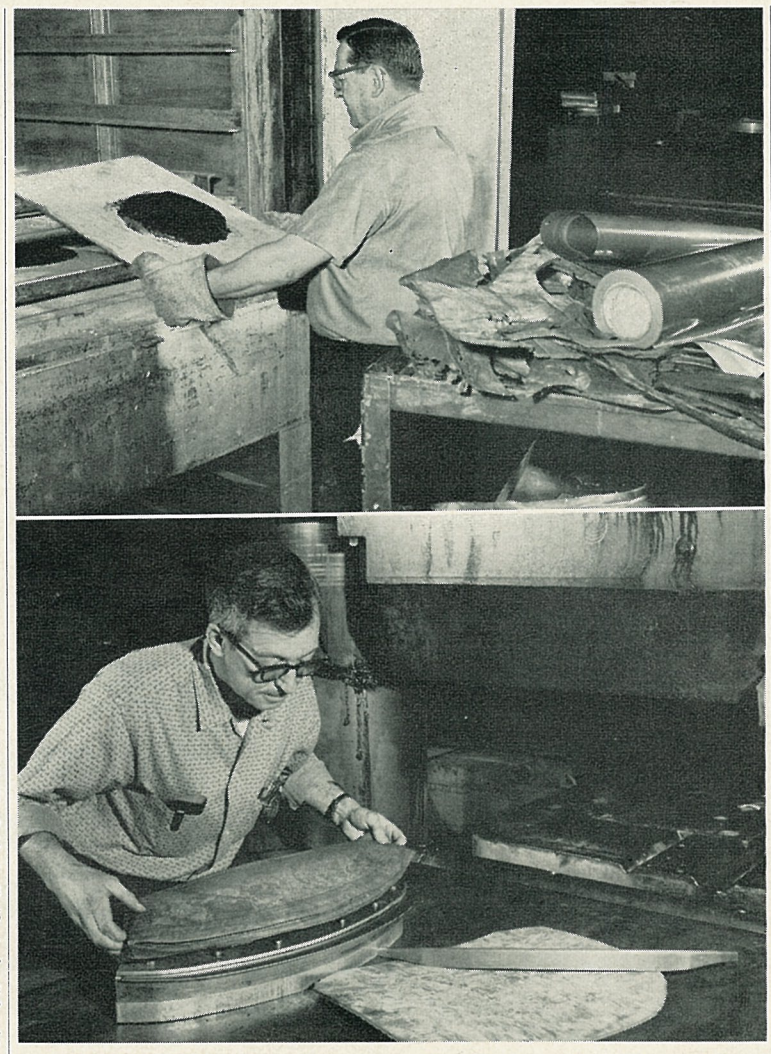
GD/Electronics (San Diego) news contact: Betty Freeby, 298-4641, ext. 1377, Plant 1, Bldg. 51.

Fort Worth Editorial Offices, Col. 72, Adm. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor: Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and Stromberg-Carlson, editorial offices, 100 Carlson Road, HUbbard 2-2200, ext. 2555. Gordon Morison, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.



RECLAMATION—Top shot shows Leo Budzynski pulling glob of melted plastic from oven as first step in reclaiming thousands of dollars worth of scrapped material for use as forming material in GD/Convair sheet metal department. Table behind him is stacked with plastic to go into oven. In lower photo, R. L. Shinn places hardened plastic sheet over aluminum alloy angle as aid in smooth forming.

Plastic Rejected For Scrap Reclaimed Through Ingenuity

A trial and error experiment by a couple of GD/Convair men has uncovered a use for thousands of dollars' worth of material tabbed for salvage.

Leo Budzynski and H. M. Woodard of Dept. 101 have discovered that discarded Scotchweld bonding tape, which has outlived its usefulness, can be converted to good-as-new forming material.

The outer protective plastic coating, which never had been destined for any other purpose by its manufacturers, can be melted into malleable putty and shaped into hard plastic sheets for forming parts. The bonding tape itself, which has gone beyond the limit for effective bonding, is used in production of sheet metal blanks.

Budzynski and Woodard began experimenting with possible uses for the piles of scrapped tape when their foreman, G. K. Cox, discovered the material had been IRed (inspection rejected) for scrap and asked them to put their ingenuity to work.

Heated in an oven to 400 degrees F., the plastic coating melts into a pliable mass which can be squeezed while hot into different thicknesses and shapes. It serves as well as conventional forming material, which costs $13 a square foot, in eliminating wrinkles and reducing handwork during forming of parts.

At the time Budzynski heated up his oven for the scrapped material, he had been melting plastic bottles to see if they could do the job. However, the red plastic coating has proved far superior to other plastic substitutes, he said, and can be remelted and used over several times.

Value Role in Army Procurement Told

"Role of Value Engineering in the Development and Procurement of Army Aircraft," was subject of Brig. Gen. David B. Parker, commander of U. S. Army Transportation Materiel Command with headquarters at St. Louis, Mo., when he spoke before the San Diego Chapter of Society of American Value Engineers last night (April 2).

About 100 SAVE members, including a large number from General Dynamics divisions in San Diego, were expected to attend the meeting, said B. W. Kahla of GD/Convair, president, to learn about value engineering and how the armed services are utilizing the potent cost-cutting tool.

Gen. Parker was Chief of Military Operations on the Manhattan Engineer Project, organization which developed the atomic bomb.

GD/E Seeking Tips For NEWS

"News Hoppers" have gone up in GD/Electronics facilities in San Diego for deposit of news tips suitable for publication in **General Dynamics NEWS.**

GD/Electronics people who have newsworthy items, concerning either GD/E products or individuals may drop a note in one of the boxes. All items suggested will be screened and checked.

Full details need not be outlined, but a brief summary of the topic should be included. Contributors must sign suggestions with their names, department numbers, and plant phone extensions.

The white boxes are located on second floor of Bldg. 51, Plant 1; in electronic assembly area, ground floor of Bldg. 51, Plant 1; in fabrication area, Bldg. 4, Plant 1. A fourth is located at GD/Electronics Plant 2 (Hancock St. facility).

For information call GD/E public relations office, ext. 1377, Plant 1, or **GD NEWS** office, ext. 1071, Plant 1.

Lafayette First Of New Sub Class

The Lafayette, first of a new class of nuclear-powered submarines designed to fire the 2,500-mile range Polaris missile, will be commissioned at General Dynamics/Electric Boat, Groton, Conn., April 23. Four days later a sister ship, the Daniel Webster, will be launched at the shipyard.

Both events are the result of the Navy's accelerated submarine construction program aimed at having a fleet of 41 Polaris submarines, each armed with 16 missiles, on station by 1967.

Archers to Compete On Easter Sunday

CRA bowmen will compete in their regular monthly target shooting on Easter Sunday (April 14), 10 a.m., at Balboa Park field range, said Commissioner Al Phipps.

Workshop nights have been discontinued with closing of CRA Clubhouse on Pacific Hwy.

Launcher For Little Joe II Withstands Loads in Test

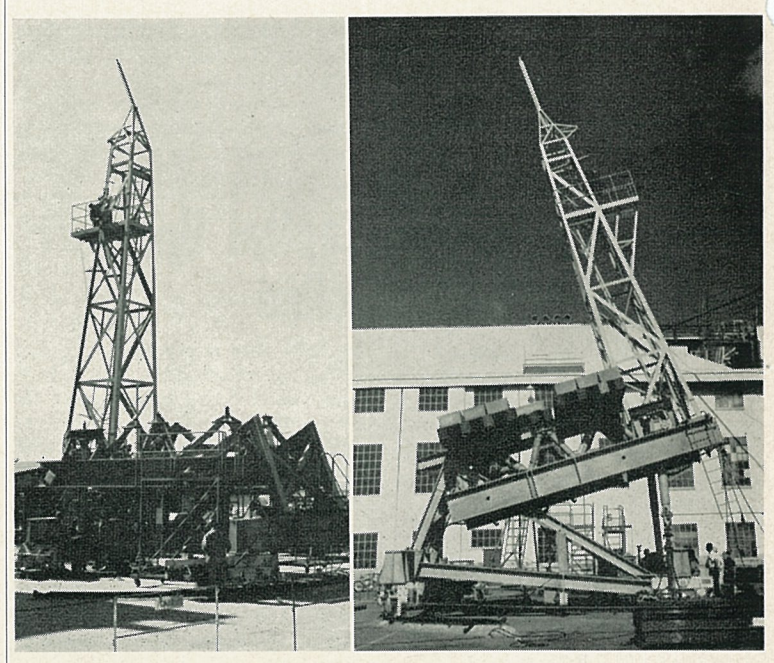
First launcher for Little Joe II launch vehicle withstood loads up to 111,000 pounds in structural proof testing last month at General Dynamics/Convair.

Deflection during application of loads was well within allowed tolerances, said N. R. Keough, superintendent of experimental, as he expressed satisfaction with test results.

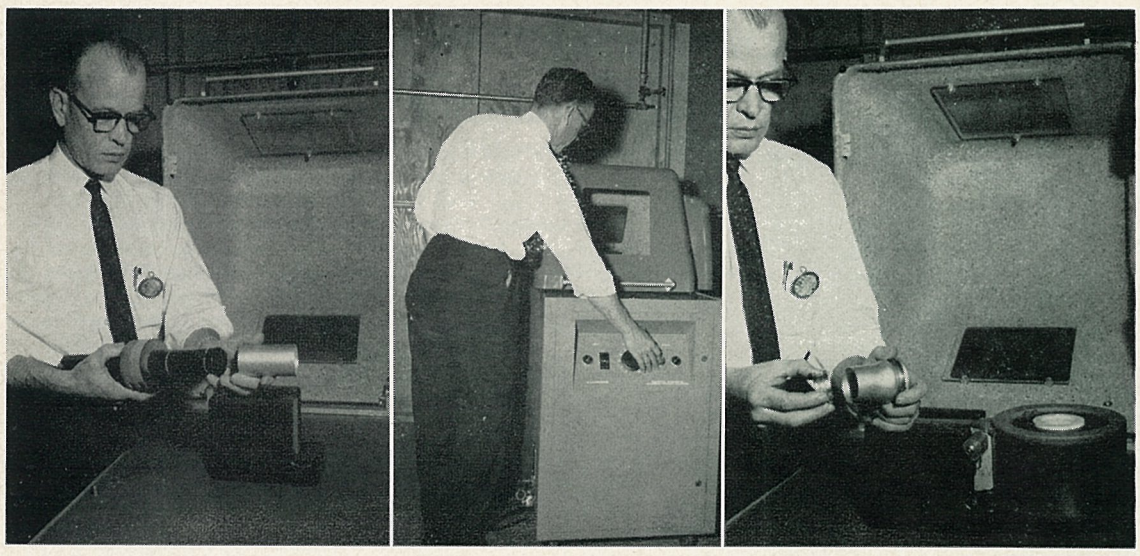
Loads from zero to the 111,000-lb. maximum were applied in increments of 20,000 lbs. by lead weights. These were supported by a platform of steel I-beams laid across the launcher structure.

During loading, the launcher was put through functional tests simulating its operation attitude and azimuth range—moved up and down and sideways as it will be during actual launching of Little Joe II.

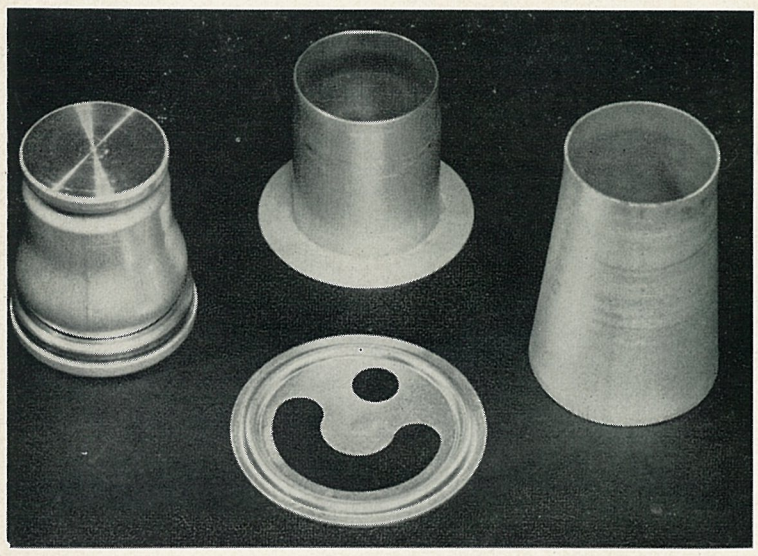
Proof testing in the GD/Convair experimental yard was preparatory to shipment of the launcher to the White Sands Missile Range, N. M., where it will be reassembled and installed some time later this month.



LOADED—Launcher for Little Joe II is tilted at 15-degree angle while loaded with 111,000 lbs. during proof testing at GD/Convair. Tall tower installed on launcher bed is stabilizing tower to hold vehicle on launcher before launching. It also contains umbilical cord connections for launch vehicle.



MAGNETIC FORCE—Demonstrating "Magneform" operation in construction of precision parts is GD/Fort Worth's K. F. Smith, senior manufacturing research engineer. At left he places tubular metal over work coil. In center he pushes button that sends machine into action. At right, part is ready for a second step.



VARIETY—Above are a few of many configurations possible with "Magneform" magnetic metal-forming process being used at GD/FW for forming precision parts in seconds. Machine is marketed by General Atomic division.

GD/FW Building Precision Parts By 'Magneform'

Incredibly rapid magnetic impulses are being used at GD/Fort Worth to swage and expand tubular forms.

The operation is done on the Magneform, a magnetic metal-forming machine perfected and now being marketed by General Atomic Division of General Dynamics.

"At top production, the machine is capable of turning out as many as 600 precision pieces an hour," said K. F. Smith, senior manufacturing research engineer.

Presently, Dept. 23 is experimenting with various bulging, blanching, and flat-piece configurations with an eye to using the process on future major programs.

Here's the way it works:

The metal part is placed on or in an appropriate work coil on the Magneform. Upon selection of an appropriate energy level, the machine's capacitors are charged to the equivalent of about 45,000 ft. pounds of energy, which is then dumped into the work coil.

"When the electrical current is produced, a magnetic field builds up," Smith said. "This generates eddy currents around the work piece, and these currents build up an opposing magnetic field. Since magnetic lines will not cross, the terrific resultant energy created is thrust into the metal tubing, which forms within about 20 millionth of a second.

"Magnetic impulses have been used to swage and expand tubular forms, as well as to coin, shear and form flat sheets."

To date, elsewhere, magnetic-pulse forming has been applied mostly in forming of conductors, such as aluminum, copper and brass. It is said to have been used to form poor conductors, such as stainless steel, when highly conductive coatings are used.

"Magneform eliminates many time-consuming operations required in conventional assembly," Smith said. "And in many instances, parts can be made which would be virtually impossible to make by conventional methods.

"Since the machine produces a uniform pressure around the edge of the assembly, a pressure-tight joint and seal can be made by swaging aluminum or copper cylinders together over grooved metal flanges or fittings."

The first Magneform machine was built at GD/Convair during 1959-60 with GD/Fort Worth entering the field about a year later. Advanced Products Department of GD built the second machine and the control circuitry for the present advanced unit now used at GD/Convair for swaging details for research projects. The GD/Convair forming group of applied manufacturing research has used the Magneform process to a limited extent in swaging ends for push-pull control surface rods for Convair jet transports.

Fins For Little Joe II Survive Vigorous Vibration Test Series

Design of swept-back fins for the Little Joe II launch vehicle was substantiated in recent vibration tests conducted at General Dynamics/Convair by a joint team of GD/Convair and GD/Astro engineers.

Four of the wedge-shaped aluminum fins, with 90-inch span, will perform as horizontal and vertical stabilizers when positioned on opposite sides of the launch vehicle's aftbody.

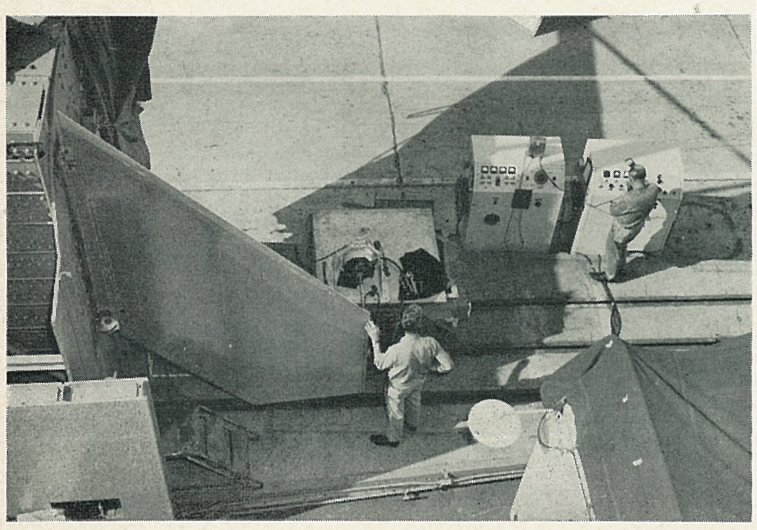
Dynamics design of the fin was confirmed, said engineers in charge of tests. In fact, there was little doubt about test results since the fins had been designed in the first place with extra strong structure supported by spars and ribs to preclude flutter.

"Under certain flight conditions an airframe structure, such as a fin, may be bending and twisting to the extent that it will result in structural failure," explained M. B. Rodriquez, GD/Convair senior dynamics engineer. "To prevent such failures, extensive theoretical investigations are made using weight, geometry, and stiffness data. These data are obtained from design drawings before construction of the fin. Because of the complexity of the structure, the estimated data must be confirmed.

"Confirmation is accomplished in vibration tests which measure the way the structure bends and twists when it is vibrated. Measurements were obtained by placing an instrument at various points on the fin structure and recording the displacements. In addition, data from the vibration test was used to determine the structural damping coefficient which is a measure of how rapidly the structural vibration will subside after the excitation is cut off."

Though little motion could actually be seen during vibration of the large part, the low steady hum from the high-frequency vibration was heard in a building 50 feet away. On a still night the sound would be audible for several hundred feet at least, said engineers.

At conclusion of the test, Rodriquez said that results concurred with data used in theoretical calculations which indicate that no aeroelastic structural failure will occur during flight. Rodriquez monitored test progress which was under direction of Gene Barbic, GD/Astro dynamics test engineer.



STRONG FIN—Shot looking down on aluminum fin for Little Joe II during recent vibration testing at San Diego clearly outlines wedge shape. Standing beside fin is Jim Brown, GD/Astro Dept. 756, while Ken Wharton, also Dept. 756, is at control console.

Model Making Breakthrough Helped GD-Grumman TFX Bid

(Continued from Page 1)

airplanes from the structural point of view," the article said.

"Boeing's total program costs for producing the Navy and Air Force versions of a common TFX showed that it expected a saving of only $397 million . . . GD-Grumman reported a saving nearly twice that, $623 million," the article said.

It was also pointed out that on final evaluation, Dynamics and Grumman had many fewer parts in its design than Boeing; Dynamics' total stood at 14,423 parts, 83.8 per cent identical in both versions; Boeing had 18,653 parts, only 60.4 per cent of of which were identical.

"He (Deputy Defense Secretary Roswell Gilpatrick) was afraid a mere 60 per cent commonality would prevent Boeing from making good on the crucial $1 billion saving," the article continued.

Following the final evaluation, he (McNamara) "concluded that both contractors were still unrealistic on costs," the article stated, "but there just wasn't time at that stage of the game to insist that they develop more reliable figures . . .

"GD-Grumman had based its costs on GD's extensive experience with supersonic fighter planes (the F-102 and F-106) and bombers (the B-58), and Grumman's 30 years of experience with carrier-borne aircraft; its bid was very low, but it expected to make a small profit.

"Boeing's estimates stemmed from its success with subsonic aircraft, like the B-47 and 707 jet transport, large open structures with much less compactness than TFX, yet it intended to produce this relatively small, highly complex fighter at manufacturing costs per manhour that were as much as 30 per cent below those prevailing throughout the industry . . ." the article continued.

"In comparing production plans," the article said, "it was found that GD-Grumman had adopted a conservative approach in that it expected the TFX development program to demand a high level of engineering and test effort."

Boeing, on the other hand, was clearly optimistic that few major problems or engineering changes would arise to challenge the validity of its extremely low engineering and cost estimates, the article said. This despite such innovations as thrust reversers, a variable-sweep wing, and the unique design for housing the engine.

"To McNamara . . . it looked as if Boeing had seriously misjudged the difficulties to be expected on this aircraft," the article said.

At the start of the "play-off" in January, 1962, according to the article, both finalists had "invested a great chunk of their technical resources in the contest—Boeing had 1,000 people assigned to the TFX, GD had made it the sole concern of virtually an entire division—Fort Worth—and they had committed capital in equal measure.

"The corporate strategies for winning . . . remained substantially the same," the article continued. "GD-Grumman's strategy was to come as close as it could to giving Secretary McNamara what he wanted, one plane for the two services . . . Boeing would again go all out to satisfy the Air Force's requirements . . . at the same time it would do the best it could do to woo the Navy, which was mistrustful of the fact that Boeing had never made a modern Navy fighter."

Until the fourth round of competititon started, both companies were "still in the dark as to how they were being judged." But before the final round they were treated "as if each had actually won the competition" and instructed that the "payoff points" would be design, commonality and reliable costs.

A breakthrough in designing process—a fiber glass wind tunnel model which made it possible to come up with a model in only ten days—enabled GD to make gross changes in its design in the final round, the article said.

Otherwise, supporting wind-tunnel data simply couldn't have been obtained rapidly enough to substantiate changes, the article pointed out. Previously, models had to be forged of stainless steel, requiring six weeks to two months to complete.

"That compression," the article quoted Robert Widmer, GD/FW vice president R&D, as saying. "permitted us to go back and look at the whole commonality problem again, instead of just making small changes . . ."

In the raw score following the final competition, the article stated, Boeing stood at 172.1, GD-Grumman at 175.6, only 3.5 points or less than 2 per cent apart.

"Boeing's prime appeal to the services was that it had designed for maximum specification (i.e., capability), but the company had been able to achieve this only at the expense of commonality. GD-Grumman's lesser appeal for the services stemmed from a design of minimum specification, the price it had had to pay for achieving a high degree of commonality," the article said.

"The chances were that Boeing's design would become even less common in the production stage."

DYNAMICS MEN TAKE OFFICE

C. E. Roye of GD/Astronautics, and GD/Convair's Elmer Sperl have been installed as third vice chairman and treasurer, respectively, of San Diego chapter, American Society of Tool and Manufacturing Engineers. Earl Williams of GD/Astro served as program director and master of ceremonies.

Function as Well as Product Come Under Value Scrutiny

"Value engineering is not the same as traditional cost reduction. "Its purpose is to find the least costly way of performing a product's function, rather than the attempt to reduce its cost.

"Thus, value engineering is a functionally-oriented system rather than a product-oriented system."

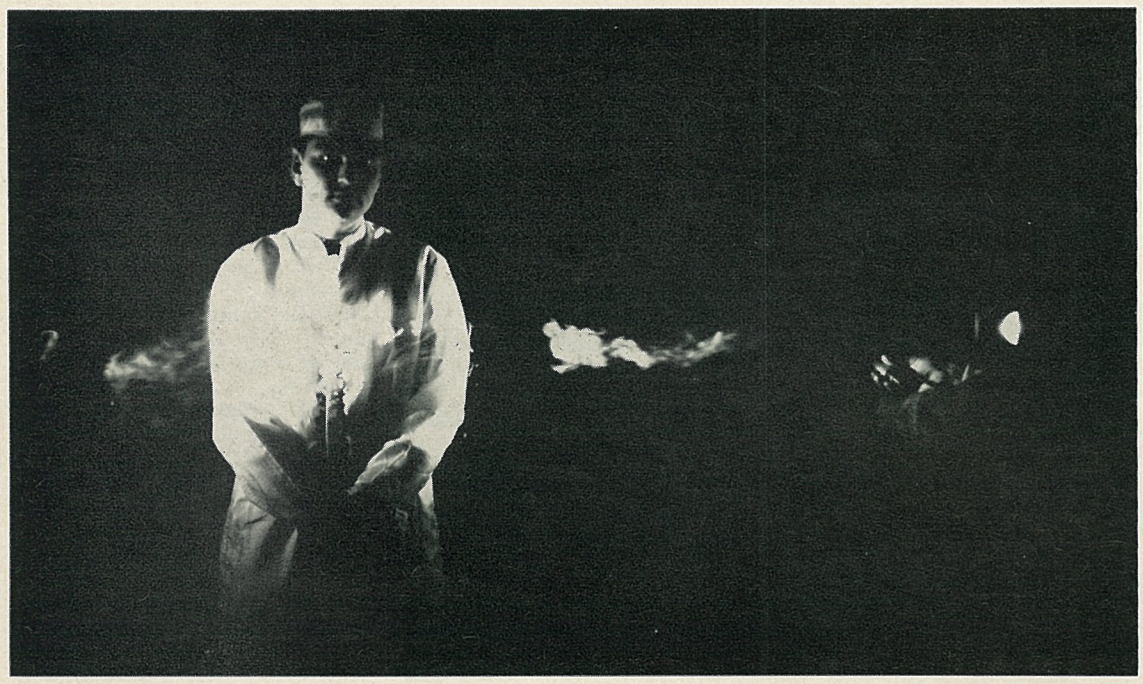
These points were emphasized by E. D. Heller, manager of value engineering at General Dynamics/Astronautics, in a March 13 address before the San Diego Chapter, National Association of Accountants, and the San Diego Chapter, Purchasing Agents Association.

Heller said the use of value engineering techniques makes it possible to identify and eliminate unnecessary costs from both products and practices, even though a good job may already have been done.

He added that cost is not necessarily a trade-off factor with performance and reliability, since these techniques make significant cost reductions while improving or maintaining performance and reliability. Too, a designer in the aerospace industry can not be held responsible for cost unless he has a reliable source of cost information, both for manufacturing and for procurement.

Thus, value engineering techniques can be used effectively in cost target programs in order to prevent unnecessary expense developing during the design phase, reducing the necessity of cost reductions to be made later.

Heller added that new Armed Services Procurement Regulations specify that virtually all Department of Defense contracts must have either value engineering incentive clauses, value engineering level of effort clauses or a combination of the two.



SPOOKY—Air-flow in General Dynamics/Pomona's ultra clean room was checked and photographed by use of small smoke generator and intense light beam. Laminar air flow distributed by large object (man) re-establishes itself very rapidly downstream and smoke had no tendency to migrate upstream or cross-stream in room.

CENTAUR CONTRACT AWARDED BY NASA

Among $30 million in major contracts awarded during February by National Aeronautics and Space Administration's Lewis Research Center were several involving General Dynamics/Astronautics.

Included was $20,413,000 to fabricate and deliver Centaur vehicles and support equipment, flight readiness programs, and support and sustain a development program and systems integration; $740,000 for installation of test equipment for launch site 36B, Atlantic Missile Range, for Centaur program; $400,000 as continued funding of research and development contract for Centaur vehicle; $611,075 for cathodes for thermionic converters; and $103,000 for engineering studies in support of Centaur.

Smoke Clues Followed In Test of Clean Room

The revolutionary performance of General Dynamics/Pomona's new clean room was verified last month in a series of tests conducted by an outside agency.

Test results confirmed that dust levels in the cross-flow clean room are far below levels possible in conventional clean room designs.

Lt. Phillip R. Austin, project officer for U. S. Air Force clean rooms, Middletown Air Materiel Area, Olmstead Air Force Base, Pa., was present to observe the tests.

"My observation of your cross-flow clean room was that it exhibited superior contamination properties. The contamination level of the room approached the characteristics of the filters used in the room," Austin said.

"Tests observed by me during normal activity in the room indicated that the contamination level appeared to be better than Air Force Class 4 clean room specifications," he added. "This type of room offers the greatest potential for the most economical and contamination free conditions in the country today. It appears that future exploration of more stringent controls will depend on their future development."

GD/Pomona placed the room in operation last fall (**General Dynamics NEWS**, Nov. 21, 1962) to process delicate instruments. It was the first laminar cross-flow type clean room of its size and created much interest when tests to classify the room taxed capabilities of measuring devices. The room was so dust free that a change is being made in military specifications.

In this new design, clean air enters the room through an entire wall of final filters at one end and leaves through return air registers at the opposite end. Fresh air makeup and air conditioning (temperature, relative humidity) are added to the air recirculated to the room. Air maintains a lineal velocity of approximately 100 feet per minute, and internally generated contamination is carried out at that rate. The room is 17 feet wide, 35 feet long and 8.5 feet high.

"The highest particle counts recorded in the room, near the outlet wall and downstream from particle producing operations, were at least one order of magnitude cleaner than the best conventional designed clean rooms. Areas near the filter wall were more than two orders of magnitude cleaner," L. F. Flinn, test engineer (Dept. 6), said.

To check laminar air flow, a small hand-held smoke generator and an intense light beam were used. The laminar air flow disturbed by large objects re-establishes itself rapidly and smoke introduced into the room cleaned out in two or three seconds.

Keen Students

Field Rep and Wife Conduct English Classes For Japanese

Jerry Dugan, GD/Convair field service representative assigned to Japan Air Lines at Tokyo, Japan, has turned school teacher in his spare time.

Both Dugan and his wife, Mary, have held English conversation classes one night a week in their home during the nearly two years they've been living in the Japanese city.

Motivated by the great desire of the Japanese to speak English, fast being accepted as the second language of Japan, the Dugans are devoting their time to teaching several college and high school boys and girls.

"Although students are taught English in the schools, they don't have a chance to speak it. Instruction concentrates only on translation of English into Japanese. Most of the younger people who have completed high school can read English but can not speak it," **reports Dugan.**

"Almost every time I ride a street car, bus, or train, some Japanese comes up to me and asks to talk to me in English."

Dugan's class of three boys and Mrs. Dugan's two girl students come one night a week for two hours' conversation.

"And, believe me they come, typhoon or heat wave, rain or shine!" said Dugan. "They are so sincere in wanting to speak English fluently that we hesitate to cancel a class even when Christmas falls on the lesson night. If we had the time, we could have classes eight hours a day, seven days a week."

Their personal contact with their young Japanese students has paid off for the Dugans, too. Dugan said that, without their classes, they never could have become really acquainted with their Japanese friends and visited their homes.



HAPPY TALK—Jerry Dugan, GD/Convair rep (right), wearing yakata, Japanese "at home kimono," converses in English with his students, from left, Hiroshi Akimoto, Jun Sawa, and Yoshikiro Ito. Kimono was gift from mother of one of students.

Weight Engineers Elect GD/Astro Men

GD/Astronautics men again dominate the slate of officers recently elected by San Diego chapter, Society of Aeronautical Weight Engineers.

They include Joseph E. Mullen, Dept. 663-5, chairman; Buddy H. Oman, Dept. 503, treasurer; W. H. Jacobsen, Dept. 663-5, secretary: and H. L. Jensen Jr., Dept. 965-4, elected to a two-year term as director.

Installation will be at an 8 p.m. dinner, April 12 at Luby's Restaurant, Pacific Beach.

Retiring officers are E. W. Koester, Dept. 966-8, chairman; Gerald Smith, GD/Convair Dept. 6, vice chairman; Mullen, treasurer; Jensen, secretary; and Ray Benson, GD/Convair, director.

Nature of 'Crack Propagation' In Icy Outer Space Studied

A rocket vehicle is probing the icy reaches of space when a meteor slashes its side. Will the result be a catastrophic explosion? Or only a slight impairment of mission capability?

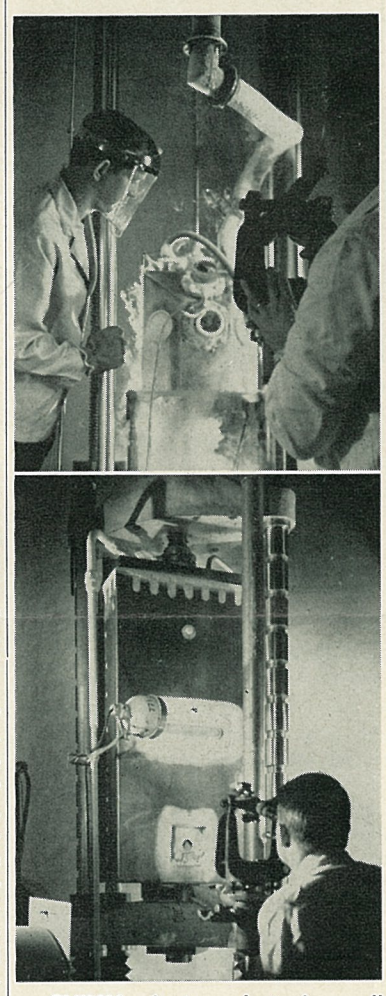
The answer will depend, in part, upon a phenomenon known as "crack propagation," the subject of continuing extensive research at General Dynamics/Astronautics.

Crack propagation is not a new problem. For years it has plagued engineers as one of the reasons for "break-up" in concrete highways.

Basically, a flaw or crack in material under stress tends to grow. This propagation may be slow. It may even stop as the load is reduced or remains constant.

But, if the stress increases, the crack may grow to a critical length, at which propagation occurs with almost explosive rapidity.

The American Society for Testing Materials, which, with the Aerospace Industries Association is probing the phenomenon, endorses the theory that "if the energy released by cracking of a material is larger than the energy required to crack the material, the crack will be self-propagating at an extremely high rate until failure."



CHILLY—In top photo is small viewing cryostat, vapor shrouded, as Roy Neie and Dick Hargis, GD/Astro technicians, study "crack propagation" in simulated conditions of space. Below, large cryostat is locked in universal testing machine with Bill Witzell using transit.

GD/Astronautic's W. E. Witzell, senior research engineer in materials research (Dept. 592-1), has worked on crack propagation studies for nearly two years. He has added still another facet to the many-sided problem by conducting tests under cryogenic (extremely cold) conditions.

Incorporation of the cryogenic factor is significant because of the effect of cold upon performance of many materials, and because of the cryogenic nature of substances used in modern rocketry.

Witzell has developed two unique test chambers called "viewing cryostats" for use in his work.

A small model accommodates a specimen four inches wide and 10 inches high. The other, in which Terry Stockham of systems test labs (Dept. 565) assisted in design and development, accepts specimens up to 18x36-inches.

Specimens are usually thin sheets of high-strength metal such as is used in pressure vessels (tanks) of modern missiles.

The cryostats are windowed chambers which enclose the specimen together with a coolant—liquid nitrogen (–320° F.) or liquid hydrogen (–423° F.) Chambers are mounted in a universal testing machine which can apply up to 200,000-lbs. load to the specimen inside.

A narrow notch is cut in the test specimen perpendicular to the direction of stress, using the electrical discharge method. In small specimens a 1¼-inch notch is used, while a five-inch center notch is cut in large specimens.

A small ruler is fastened to the notch, and the specimen is loaded into the cryostat. Coolant is added to achieve cyrogenic temperature.

Through surveyor's transits about 10 feet away, two technicians sight through a port in the cryostat to observe ends of the notch as the testing machine applies stress. Referring to the ruler, they make readings at intervals throughout the test as the notch grows to—and past—the critical point.

Results of repeated observations with a variety of specimens—stainless steels such as those used in GD/Astro's Atlas and Centaur, titanium alloys, even butt welds on these materials—have provided a wealth of data.

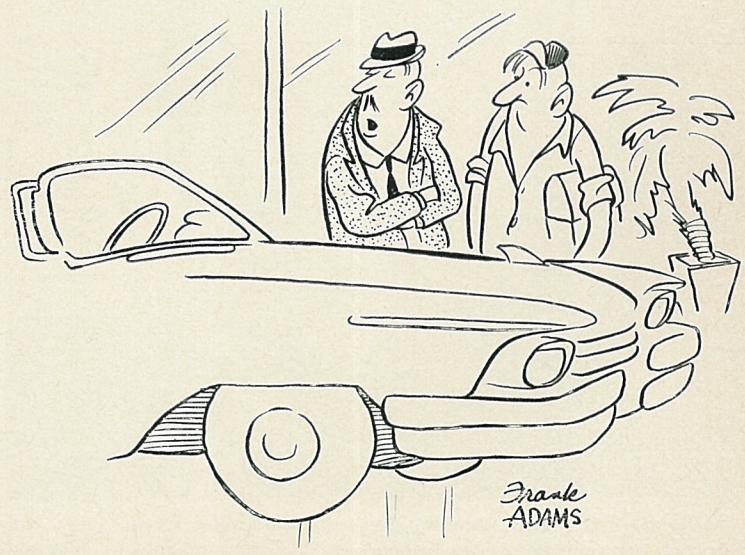
This information has verified suitability of Atlas and Centaur materials, and is highly significant to designers and builders of tomorrow's space vehicles.

This application at the design stage is the ultimate aim of Witzell's continuing study.

Accurate crack propagation data will permit engineers to base structural stress levels of a given material upon the known flaw size which can be detected by non-destructive methods.

Result: maximum reliability.

Encouraging the studies are Abe Hurlich, chief of materials and structural research, and T. T. Tanalski, material research. Assisting with setups and observations are technicians including Roy Neie, Jack Whitehead and Bill Atkins, Dept. 756.



"It's our experimental model . . . You buy it, then see if you can make all the payments before it falls apart . . ."

Centaur Space Vehicle Flies Coast to Cape

A flight-equipped Centaur space vehicle last month made the first of two trips scheduled for it during a "life time" of testing.

The vehicle—built by General Dynamics/Astronautics — was shipped via Air Force C-133B from San Diego's Lindbergh Field to Cape Canaveral, where it will be mated to an Atlas launch vehicle awaiting it there.

After a series of tests in Florida—some of which will proceed almost to the point of launch—both Atlas and Centaur will be sent to NASA's Lewis Research Center, Cleveland, Ohio, for still further testing.

"The complete Atlas-Centaur is earmarked specifically for ground testing purposes," explained Grant L. Hansen, GD/Astro vice president and Centaur program director.

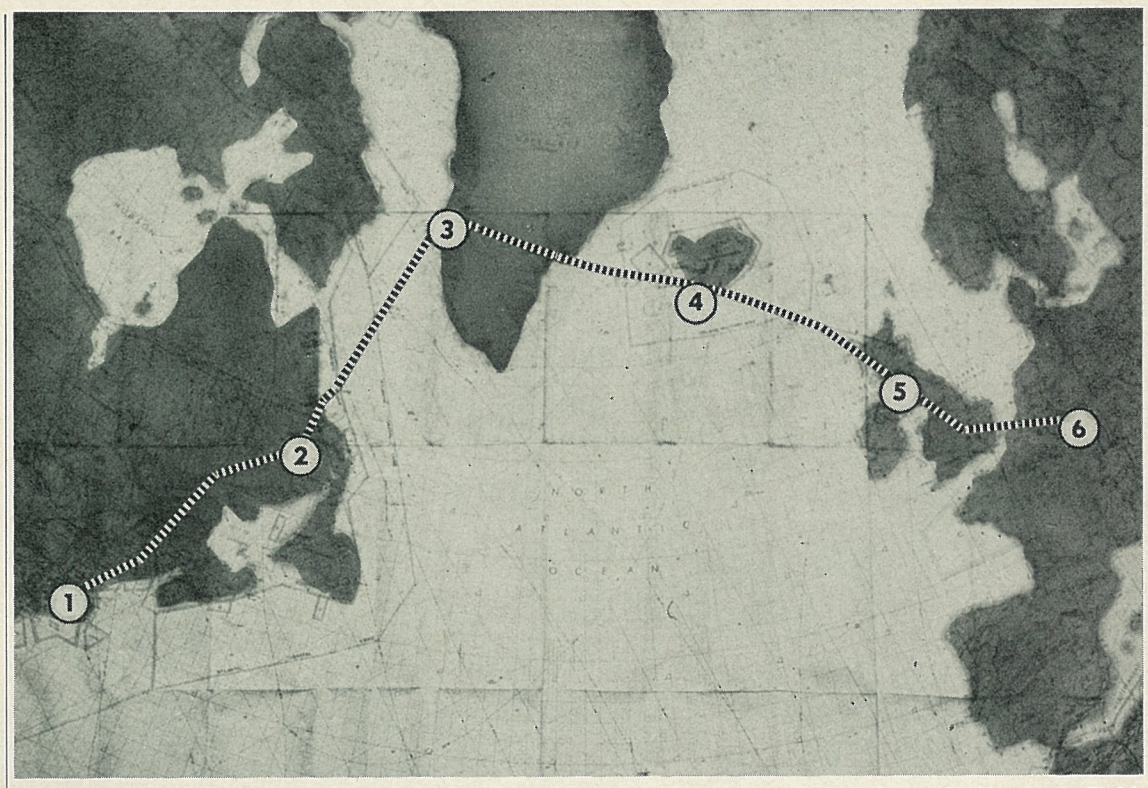
"This enables us to perform tests on the total flight system as extensively and as often as required without interfering with program schedules, and without the full expense of actual flight tests."

Tests scheduled at Cape Canaveral for the Atlas-Centaur combination include propellant tankings with both vehicles, verification of launch procedures, launch crew training, and checks of both airborne and ground equipment operation.

Centaur is the first space vehicle to be fueled with liquid hydrogen. Its development has been assigned the nation's highest priority.



OFF FOR CAPE—GD/Astro-built Centaur is loaded aboard C-133B at San Diego's Lindbergh Field for flight to Cape Canaveral.



F-102 ROUTE—Path of F-102s, making first transatlantic flight, is traced from (1) Hanscom Field, Mass., (2) Goose Bay, Labrador, (3) Sonderstrom, Greenland, (4) Keflavik, Iceland, (5) Prestwick, Scotland, to destination (6) Ramstein Air Base, Germany.—USAF photo.

Work on 130-D For Mercury Earns Praise

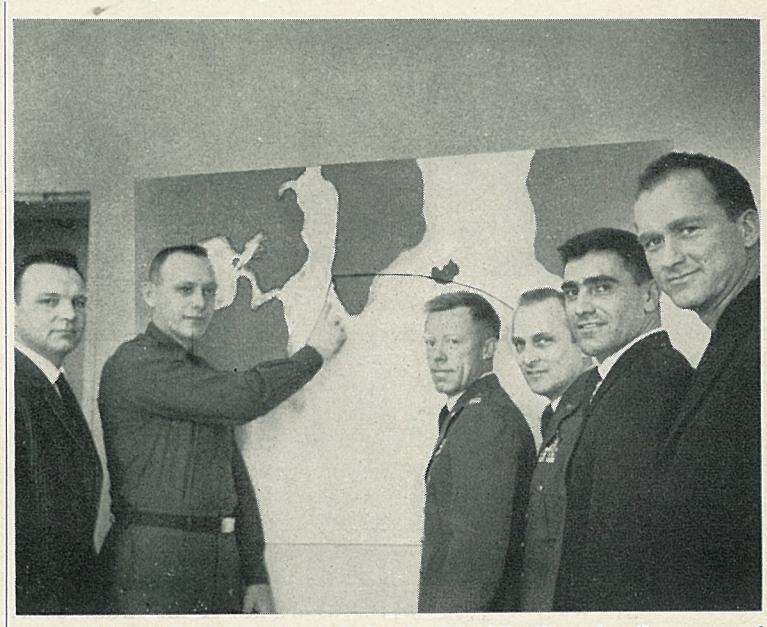
Special praise for work involved in preparing Atlas 130-D for Project Mercury has been received at General Dynamics/Astronautics by President J. R. Dempsey.

Maj. Gen. Ben I. Funk, commander, Space Systems Division, Air Force Systems Command, wrote:

"I wish to express my thanks for the excellent job done by General Dynamics/Astronautics in having Atlas 130-D ready for the Mercury factory rollout inspection and subsequent acceptance on March 15. Your organization showed its true capabilities when it was able to recover from the difficulties preventing acceptance of the booster on Feb. 1 and just six weeks later to present to the Air Force the best Mercury Atlas launch vehicle possible.

"This vehicle represents the achievement of a long standing goal of the Mercury Atlas launch vehicle program in that it was delivered without any contractual deviations. I recognize that this goal was reached only through the extraordinary efforts of all of your Mercury people. You can be justifiably proud of them.

"I would like to add a special word of commendation to Mr. C. S. Ames (vice president-SLV) and Mr. R. W. Keehn (assistant program director-SLV) for their part in directing the 130-D operation and in improving your original schedule by two weeks. They have completely vindicated our faith in their ability to improve upon an already difficult schedule while still maintaining the superior quality demanded of a Mercury Atlas launch vehicle."



AT FLIGHT'S END—Capt. John Doyle, AF pilot who flew one of two F-102s across Atlantic, points out flight pattern to GD/Convair reps Henry Vinz, far left, J. M. Barrett and O. B. Johnson, far right. Other AF officers are Capt. Herb Kalen and Capt. Jack Lee, pilot of second F-102 on over-ocean flight.—USAF photo.

Two F-102s Fly Atlantic For First Ocean Hops

F-102s made their first flights across the Atlantic recently when two of the Convair-built jet interceptors made the transoceanic hop from Hanscom Field, Mass., to Ramstein Air Base, Germany.

The two specially-instrumented F-102s, attached to the Air Force Electronic Systems Division, are now in a test program of the Air Weapons Control System (412L) at Western European sites.

The new mobile system is designed to direct defensive intercepts of hostile aircraft and, also, guide aircraft toward ground targets (**General Dynamics NEWS**, March 20).

Air Force pilots Capt. John J. Doyle and Jack R. Lee were at controls of the F-102s on the ocean crossing. The entire journey was broken into five legs—from Hanscom Field to Goose Bay, Labrador, to Sonderstrom, Greenland, to Keflavik, Iceland, to Prestwick, Scotland, to Ramstein AB.

"Neither of us had flown in the Arctic region before," the pilots reported, "so the unique beauty of the ice pack and the ice cap at Greenland made the flight exceptionally interesting."

Both are long-time friends of Convair jets. Capt. Doyle, currently assigned to Fighter Branch at Hanscom as operations officer, has logged 500 hours in F-102s. Since 1958 he has been a test pilot in the F-102/106 SAGE programs. Capt. Lee, chief with the Fighter Branch at Hanscom, has spent 250 flight hours in the Convair craft. Both have 2,000 hours jet time.

Capt. Lee and another experienced F-102 pilot, Capt. Herbert D. Kalen now are flying the F-102s in the European area as test pilots attached to the 412L Air Weapons Control Office. Capt. Kalen also is Joint Test Center representative.

GD/Convair representatives in Germany for the tests are J. M. Barrett, the division's 412L AWCO representative to the Joint Test Center; O. B. Johnson, F-102 airframe representative; Henry Vinz, F-102 integrated systems representative.

The two instrumented F-102s were to return to the United States this month to take part in current 412L testing over North and South Carolina.

Corporation Quality Control Committee Meets at GD/Astro

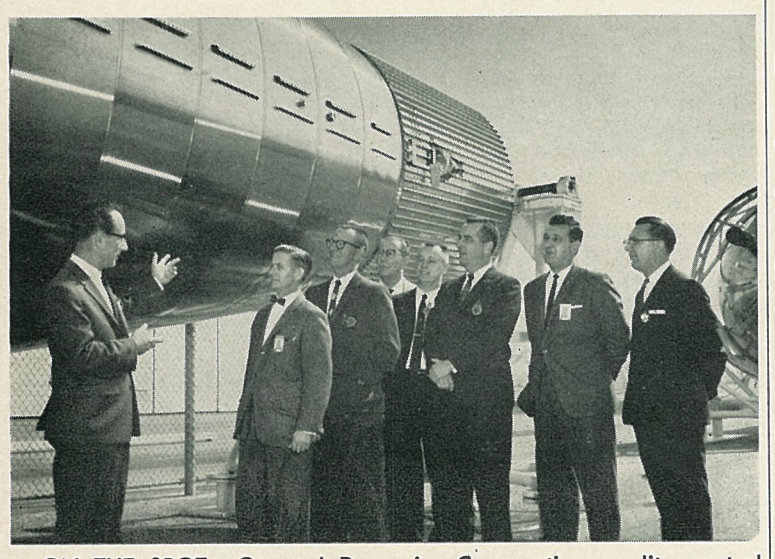
General Dynamics/Astronautics late last month was host for a two-day meeting of the General Dynamics (corporate) Quality Control working committee.

On the agenda were such topics as: discussions on the committee position relative to a proposed reliability survey questionnaire; development of a standard questionnaire for control of distributors; a proposal for the creation of a unified outside procurement inspection activity encompassing all divisions; tool and gauge control; a method for monitoring of suppliers' quality control system; open discussions; and a special presentation by GD/Pomona on "Government Source Inspected Stock Items."

This committee is composed of representatives from such General Dynamics divisions as Astronautics, Canadair, Convair, Electric Boat, Electronics at San Diego, General Atomic, Fort Worth, Pomona and Stromberg-Carlson.

It was organized to develop between divisions a uniform philosophy of supplier relations, to initiate and pursue a standard system of quality control and quality assurance procurement practices.

Host for the affair was Astronautics' quality control function of reliability control department.



ON THE SPOT—General Dynamics Corporation quality control working committee met recently at Astronautics where Sam Braun, left, went over finer points in front of Atlas missile. Representatives from left are Braun, L. G. Menches (Astro), C. Wallman (Convair), C. W. Bailey (Pomona), W. Skrobiza (Electronics), D. W. James (Fort Worth), T. J. Marcella (Astro), and J. Treese (General Atomic).

Hurlich Talks On Cryogenics

Abe Hurlich, GD/Astronautics chief of materials and structures research, Dept. 592-1, made two appearances last month before technical societies.

Speaking before the Chicago chapter, American Society for Metals (ASM), he discussed "Evaluation and selection of materials for cryogenic temperature applications."

Later, he presented a paper on "What's new in non-ferrous metals for aerospace applications," at the Western Metal Congress, ASM, in Los Angeles.

Hurlich will participate in June in a symposium on advances in technology for stainless steel and related alloys arranged by American Society for Testing Materials in Atlantic City, N. J. He will also present a paper on "Evaluation and application of stainless steels in cryogenic environments."

J. P. Maguire Elected To Board of MAA

J. P. Maguire, General Dynamics Corporation secretary, has been elected to the board of directors of the Manufacturers Aircraft Association for the 1963 term at the annual stockholders meeting.

The Association, representing major aircraft companies in the United States, administers the patent cross-licensing agreement for the country's airplane industry.



"Here's your supper, Dear, so you can go right on painting."



GOING AGAIN—Happy troupe of General Dynamics skiers is pictured on recent bus trip to Mammoth. Sponsored by ARA Snow Ski Club, trip will be repeated on still more elaborate scale April 19, 20 and 21.

Showers of Silver Dollars Added to Rain at Trap Shoot

Silver dollars, and rain, too, poured down on trapshooters turning out for the CRA-ARA Gun Club's second ATA registered trapshoot of the year, March 17, at Gillespie Field range.

Nine five-man squads pitted themselves against keen competition, and rough weather, in three divisions.

CRA Commissioner Jack Swank said that he was surprised that so many stalwarts, several from Los Angeles area, turned out on such a stormy day. Shooting continued throughout heavy showers.

Real hard cash, $225 worth, was handed out to winners in four classes of the 16-yd. division, besides handicap and double target events. Only General Dynamics contestant in the money was George Clayton of GD/Convair who tied with Stan Eggers at 91 in Class D. They split the prize money of $46.50.

Top shot was Lloyd DeKraii of Escondido who scored 99 out of a possible 100 in Class B for $56.50.

Class A winner was Carl Haynes of San Diego with a 91. He won $42.50. Jim Prewitt, also of San Diego, took top money of $52.50 for Class C event with a 97.

Herb Langfelt of San Diego won the doubles with a score of 75 for $15. Eggers won $48.10 more as high scorer in the handicap event with 87.

First evening ATA registered trapshoot will be held Friday (April 12) as a trial run. If enough shooters enter, a regular schedule of Friday evening registered shoots will be scheduled throughout the summer months, said Swank.

Competition will start at 7 p.m. in two firm events—50 targets at 16-yd., and 50 handicap. If time allows, 25 pair of targets will be thrown for a doubles event.

The regular monthly Sunday ATA registered trapshoot will be held April 21 at Gillespie Field range with registration starting at 8:30 a.m. and shooting at 10 a.m. Silver service trophies will go to winners.

Gun Club members will compete in their regular monthly skeet, trap, rifle competition this coming Sunday (April 7) at 9 a.m. and meet in regular season next Tuesday (April 9), 7:30 p.m., Gillespie Field Clubhouse.

Foreign Tour Rates Listed

General Dynamics employees in San Diego, through affiliation of their recreation associations, are eligible for a series of group tours to be offered to foreign points at various times this summer.

San Diego Industrial Recreation Council is sponsor.

Reduced rates through group participation are available to all employees and members of their immediate families. Tours are conducted by International Tours, Inc.

Departing Los Angeles May 17 is a 10-day tour of Hawaii with visits to the islands of Hawaii, Maui, Oahu and Molokai. Cost: $295 per person.

Departing Los Angeles June 22, a 15-day visit to Mexico (Puerto Vallarta, Guadalajara, Mexico City, Taxco, Cuernavaca, Acapulco). Cost: $295 per person. An optional return, at higher rates, is available via the SS Acapulco.

Departing Los Angeles Aug. 17, a 15-day Pacific island tour including Hawaii, Moorea, Tahiti and Bora-Bora. Cost: $695 per person.

Departing Los Angeles Sept. 18 a nine-day inland water cruise from Vancouver, B.C. to Alaska and return. Cost: $375 per person.

Stickney Rolls Series of 734 To Lead Club

Bowling teams from General Dynamics Management Clubs took three out of the first five places in the NMA Zone A tourney for Southern California and Arizona clubs the weekend of March 23-24.

Included in the 63 teams competing at Clairemont Bowl, San Diego, were 23 from the Astro club, seven from Convair and Electronics group.

Astro Tigers trailed the winning Douglas Aircraft team to finish second with a 3,059 team series. Top score was 3,081.

North American bowlers were third with 3,055; Convair Mixed-Up Five, fourth, 3,037; Convair Jets, fifth, 3,006.

Highlight of the kegling tournament was the performance of Gordon Stickney, a facilities control engineer in GD/Electronics, who turned hot to pile up the high individual handicap series of 734. Usually bowling with an average of 158, Stickney rolled games of 240, 224, 186.

Other individual trophies went to Larry Atwell of Astro, high individual handicap game of 282; W. Carlson of Robert Shaw Grayson Controls, high individual scratch game, 256; T. Sherman of Douglas, high individual scratch series, 646.

F. L. Erwin and Harry Lund were in charge of arrangements for the annual keg tournament.

Discount Offered On Racing Tickets

General Dynamics folk can obtain 50-cent discounts on all seats for stock car and motorcycle races, weekends, at Cajon Speedway, Gillespie Field, using IRC discount cards available at employee services outlets.

"Super stock" races are scheduled April 18, 27, May 11, 17 and 25, while "claiming stocks" race April 6, 13, 20, May 4 and 18. Motorcycle races are slated April 5, 12, 26, May 3, 10, 24 and 31. On Memorial Day (May 30) both "super" and "claiming" stock events are scheduled.

Races start at 8 p.m. all days. Prices, with discounts, range from 75 cents to $1.25. Children are admitted free.

Salvage Schedule For April Listed

Salvage yard schedule for the next four weeks at GD/Convair and GD/Astro sites is:

GD/Astro—April 6, 20.

GD/Convair—April 13, 27.

Mid-March Ski Trip Draws 86; Another Scheduled April 19-21

ARA Snow Ski Club's popular bus trip to Mammoth for General Dynamics ski enthusiasts will be repeated with another trek to the snow country scheduled April 19, 20 and 21.

A trip in mid-March attracted some 86 persons.

The April version is designed as a complete package: bus transportation, two breakfasts, three dinners, snacks on the bus, lodging, and all lift tickets, for only $44.50.

Additional information and reservations are available from Hal Moore, ext. 1487 at GD/Astro's main plant, or after working hours at 277-4631.

The March trip was highlighted by Astro club races under chairmanship of Bill Witzell. Dave Talbot won advanced class, with Moore and Vicki Ebberly tied in intermediate category, and Charlie Hill and Norm Takvam sharing beginners' honors.

Gene Rockafeller and Moore handled trip arrangements.

ARA Snow Ski Club will hold its final business meeting of the season today (April 3) at 7:30 p.m. in ARA Clubhouse. The agenda calls for movies of the year's ski trips and presentation of trophies.

Dynamics Men Seek Office in Society

Seven of the 10 nominees for office of the San Diego Chapter, American Value Engineers, are General Dynamics men, representing three San Diego divisions.

Nominated for president are A. S. Freedman, GD/Electronics manager of design assurance, and H. P. Williams, GD/Convair manager of value control.

Others are C. W. Christie of GD/Astronautics who opposes D. D. Shirk of Solar for first vice president.

Secretary nominees are P. E. McCourt of GD/Electronics and M. D. Weisinger of GD/Convair; treasurer, G. J. Bartolomei and A. R. Hermann, both GD/Convair.

Ballots are now in the hands of SAVE members with election results to be announced at the May meeting.

Blair Valley Goal Of Trailer Group

Blair Valley is target this weekend (April 5, 6, 7) of Astro Travelers, ARA trailer club, as the group converges on De Anza-Borrego State Park for a Border District TTCA rally.

Last month, the group celebrated its fourth anniversary with a dinner-dance at Wagon Wheel Restaurant. ARA Commissioner Ray Parga was master of ceremonies.

Astro Travelers is open to all GD/Astro employees. Additional information is available from Parga, ext. 3805, or Bill Scott, ext. 1445, both at Plant 71.

ARA Club Hosts Annual Rally

Members of ARA Sports Car Club will remain on the sidelines to host other area sports car enthusiasts at the club's annual championship rally April 21.

The event, open to everyone except members of the Astro club, will get under way at 6 a.m. from in front of GD/Astro's Bldg. 2 reception center. The rally will last about 8½ hours, during which drivers will cover some 300 miles.

The route is described as including "some of the most beautiful scenery in the state," and includes provisions for adequate lunch and rest stops.

Championship regulations limit the number of persons in each car to two. Each driver is required to have a passenger who will act as navigator.

Entry blanks and additional information can be obtained from J. A. McRae, GD/Astro ext. 4251.

The ARA club meets at 7:30 p.m. on the third Thursday of each month in ARA Clubhouse. At the next four meetings, a series of films will be shown depicting the evolution of sports car events from 1902 to the present.

At the meeting April 18, the film "Heroic Days" covering 1915 to 1928 is scheduled. Visitors are welcome at all meetings.

Hi-Fi Club Sponsors Recorded Concerts

Programs for free Friday night recorded concerts in the club studio have been announced by ARA Hi-Fi/Music Club.

Friday (April 5) the group will present the Nutcracker Suite and The Mikado, while the following program, April 12, will feature Liszt's "Hungarian Rhapsodies" No. 1 and 2; Enesco's "Rumanian Rhapsodies" No. 1 and 2; and the Grand Canyon Suite.

Programs begin at 7:30 p.m. both nights in ARA Clubhouse.

GD/E ORGANIZING LAS VEGAS TRIP

General Dynamics people in San Diego have until this Friday (April 5) to sign up for a weekend of fun on a Las Vegas trip, organized by GD/Electronics.

Kay McCutchan, GD/E Plant 1, ext. 1762, and Juanita Jones, GD/E Plant 2, 298-8331, ext. 21, will take reservations until 4 p.m. on the Friday deadline date.

The Las Vegas weekend trip is set for May 17-19 and costs $26 per person for transportation and two nights hotel lodging. Half must be paid at time of sign-up and the balance by April 29.

Chartered buses, enough for all who want to go, will leave the Bldg. 19 executive parking lot at 5 p.m. on May 17, and return travelers to San Diego about 9 p.m. on Sunday evening.

GD/Astro Shooters Compete April 14

GD/Astro shooters have been invited to take part in matches sponsored by ARA Pistol Club at 9:15 a.m., April 14 at San Diego Police Pistol Range, 40th and "A" streets.

Both a .22 Camp Perry match and a .45 Short National event were fired at the club's last outing in March.

Ralph Sanderlin edged Gordon McPherson, ARA commissioner, 295-295 in .22 master class; Harry Black topped Ron Hughes, 287-280 in expert category; John Bennett fired 271 and Bill Worthington 258 in sharpshooter class; and Rod Eschenburg scored 248 in the marksman bracket.

McPherson's 279 edged Al Schindler's 278 in the .45 master class competition, with Bill Givens firing 227 and Angrim Carlson, 189, in expert class. Among sharpshooters, Worthington led Les Vivian, 221-175.

Gardeners Set For Rose Show

Roses, roses, roses will be featured when CRA-ARA gardeners exhibit their prize productions in their annual Spring Rose Show Sunday (April 21) in the Floral Association Bldg., Balboa Park.

Final arrangements for the event, one of the two highlights of the year for General Dynamics clubs, will be made at tonight's (April 3) meeting at the Balboa Park site, said Commissioners Everett Henderson (Astro) and Gene Zimmerman (Convair).

Exhibitors may enter four divisions: roses, with 34 different classes for single, three mixed, six mixed roses, one-stem and three-stem floribunda and grandiflora, in different colors and blends; arrangements; corsages, open to roses, any cut flowers, orchids or other tropical blooms; and children's arrangements.

Best-of-show awards will be given for single rose, six mixed, grandiflora, arrangement, child's arrangement, three roses, floribunda, corsage.

All roses must be grown by exhibitors.

Entries will be accepted from 7 to 11 a.m. The public is invited to view the displays from 1 to 6 in the afternoon.

Classification forms are available at Astro and Convair employee services.

Astro's Bob Byron Best of Speakers

Dynamic Toastmasters Club #457 placed a winner in the Area 5 speech contest held last month at Kings Inn.

GD/Astro's Bob Byron of the Dynamic group won the serious speech category with "Speak Your Mind." He will represent Toastmasters Area 5 in upcoming district competition.

The club will hold installation of officers tomorrow evening (April 4). The group normally convenes at 6:30 p.m. each Thursday in GD/Convair executive dining room, Pacific Hwy.

Sports & Recreation

CRA Aeromodelers to Compete In Annual Free Flight Meet

Some of the best aircraft modelers in Southern California will be competing for the grand sweepstakes award in CRA Aeromodelers' annual Free Flight Flying Contest this weekend, April 6 and 7.

At least 30 modelers from clubs in the Los Angeles and San Diego areas are expected to enter the open competition, said Larry Peterson, CRA club president.

Sweepstakes trophy will go to the person piling up the most points on all entries, both gas-powered and rubber-powered, based on appearance and performance.

Scale judging will be held Saturday evening from 7 to 10 p.m. in the Convair cafeteria, 3302 Pacific Hwy., and flying competition set for the next morning, 8 a.m. to 1 p.m. at the Clairemont Mesa flying site. Scale points will be given according to AMA rules.

Models may be entered in open senior and junior (under 16-yrs.) classes with CRA trophies going to first three places in each for top gas-powered models. This year, for the first time, special awards will go to winners in a rubber-powered flying scale division, open senior and junior classes.

Also, prizes will be given for the best World War I, World War II, low wing, and most unusual scale models.

Contestants may enter as many models as they wish for the $1 fee. Juniors may enter the rubbered-powered class for 25 cents. Unlimited flying attempts are allowed with four official flights counting for scores.

Judges will be Bill Service and Nat Antonioli of GD/Convair, Phil Colburn of GD/Astro, and Lloyd Hemmingway. Contest director is Rolland Dexter of General Atomic.

The public is invited to attend both the judging and flying events, said Peterson.

Durnell Will Head Model Railroaders

Bob Durnell of GD/Electronics will head the San Diego Division of the Pacific Coast Region of National Model Railroad Association, which includes model railroaders in San Diego and Imperial counties.

Durnell was elected to the top post of superintendent March 24 at a division meeting hosted by the SD Model Railroad Association. Bert Gowing, formerly of GD/Convair, will serve as chief clerk. Both will be installed for their two-year terms of office at the region convention at Bakersfield in May.

GD winners in the model contest held in connection with the election were: Dick Lingley of GD/Convair, first in freight car classification; Dave Kahler, also GD/Convair, first, diesel locomotives; Mike Ciancio, Corporate auditing, first, third, and fourth in structures; Ed Alvarez, son of John Alvarez of GD/Convair, first, steam locomotives and cabooses; Karl Busch, GD/Convair, fourth, passenger cars.

Convair, Electronics Linksmen Solicited

GD/Convair and GD/Electronics golfers may register for next month's San Diego Industrial Recreation Council 1963 golf tournament starting tomorrow (April 4) through April 18 at employee services, Bldg. 32, Plant 1.

IRC play is scheduled for the weekends of May 4-5, 11-12, at Torrey Pines and Balboa Park courses. Entry fee is $3.50.

Any General Dynamics employee with an established handicap from four CRA or ARA tournaments since last year's IRC event is eligible to enter.

GD/E, GD/Convair Join Douglas Trailer Bugs

A rainy weekend failed to dampen spirits of well over 100 trailerites from GD/Convair, GD/E, and Douglas Aircraft groups who gathered March 15-17 at O'Neil Park near El Toro base for a joint birthday celebration.

Activities scheduled for Saturday night were rained out but members and guests all joined for a fried chicken potluck topped by a large anniversary cake observing the CRA Road Runners' third and the Douglas Jetliners' fifth birthday.

Bill Pierce acted as wagonmaster, assisted by Pete Peterson. George Hurley Jr., Road Runners president, and Vahl Harris, president of the Jetliners, officiated at birthday festivities.

The northward trek broke the Road Runners' usual custom of a return trip to Yaqui Pass, near Borrego Springs, site of their first outing three years ago. However, this year's anniversary weekend gave CRA travelers a chance to renew acquaintance with friends made during two previous joint outings with the Douglas club this year.

As the CRA group marked its third year, it had 39 paid-up members on its rolls. A review of last year's highlights showed the club receiving top honors at the annual rally of Border District Trailer Club of America at Del Mar where Road Runners won first place for their costume parade entry.

The winning display of model trailer and "road runner" was seen in other community parades last fall. The club also handled a booth at the Mission Valley Trailer Show. Members fanned out over the Southern California area, from mountains to desert regions, in overnight outings to such spots as Hulburd's Grove, Burnt Rancherio Campgrounds, Blair Valley, Vallecito Stage Station County Park, Split Mountain, and CRA's own Pine Crest recreation area near Julian.

Road Runners also joined in Southland district rally events during the year and plan to spend this coming weekend, April 5-7, as one of the clubs gathering for the Travel Trailer Clubs of America Border District Rally in Blair Valley.

Youngsters to Get Swim Instruction

Summer swim classes for GD/Convair and GD/Electronics youngsters, 3 to 5 years old, will be held through CRA arrangements at Armed Forces YMCA, Columbia and Broadway, starting April 17.

Classes will meet Wednesdays and Fridays for five weeks. Cost is $10.

Four class times are open: 9:30, 10, 10:30, or 11 a.m. Groups will be limited, with each instructor handling only five youngsters at a time.

Parents wishing to enter their children in the program must register and pay fee to South Bay YMCA, 6116 Third St., Chula Vista, by April 16.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Annual Free Flight Flying Scale Contest April 6-7. Judging Saturday night, 7-10 p.m., Convair cafeteria, Pacific Hwy.; flying Sunday morning, 8 a.m.-1 p.m., Clairemont Mesa Flying Site. Call Larry Peterson, ext. 1447, or Don Larsen, ext. 2289, both Plant 1, for details.

ARCHERY — Monthly shoot April 14, 10 a.m., Balboa Park field range.

BOWLING—Entries close April 7 for CRA plant championships, April 20-21, 27-28, Pacific Recreation. Call Jim Hayman, home phone, 466-1262, for information.

BRIDGE CLUB—Play open to all General Dynamics people every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy.

CAMERA CLUB—Joint CRA-ARA model shoot April 7, 7:30 p.m., Photo Arts Bldg., Balboa Park.

DELTA DIVERS — Meeting April 16, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

FISHING CLUB — Regular meeting April 16, Gillespie Field Clubhouse. Potluck dinner at 6:30 p.m. business session at 7:30.

GARDEN CLUB — Joint CRA-ARA meeting tonight (April 3), 7:30 p.m., Floral Association Bldg., Balboa Park. Annual CRA-ARA Rose Show, April 21.

GOLF—Entries taken April 4-18 for IRC tournament (May 4-5, 11-12) at employee services, Bldg. 32, Plant 1. CRA tourney April 13-14, Carlton Oaks.

GUN CLUB — Monthly skeet, trap, rifle shoot April 7, Gillespie Field Range. Regular meeting April 9, 7:30 p.m., Gillespie Field Clubhouse. Registered ATA trapshoots, April 12, 7 p.m., and April 21, 10 a.m.

ICE SKATING — Regular Thursday ice skating sessions for General Dynamics people at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children under 12, 20¢.

PISTOL CLUB — CRA-ARA inter-division match April 14, 9:15 a.m., SD Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow night (April 4), 8 p.m., Harbor Drive club headquarters.

ROAD RUNNERS — Weekend outing TTCA Border District Rally, April 5-7, Blair Valley, Anza-Borrego Desert area.

ROLLER SKATING — Skate night April 15 at Skateland, Front and G Sts. Tickets at employee services, Bldg. 32, Plant 1.

SOFTBALL—Tryouts for GD/Convair-GD/E city league team April 5, 7 p.m., Cabrillo Field.

SPORTS CAR CLUB—Meeting tonight (April 3), in Convair cafeteria main dining room, 7:30 p.m. Annual open championship rally sponsored by ARA group April 21.

STAMP CLUB — Meeting tomorrow (April 4), Convair executive dining room, 7:30 p.m.

SWIM NIGHT — No family swim night in April.

TROPICAL FISH — Thursday night workshops arranged on phone-call basis. Call Pete Beyrer, ext. 1245, Plant 1.

VOLLEYBALL — IRC league play Wednesday, Thursday evenings Muni Gym, Balboa Park.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.



SNOW TRAIL—Bret, Brittany spaniel, lopes through fresh snowfall which blanketed Pine Crest, CRA mountain resort, with several inches during March 16 storm to transform area into sparkling "winter" scene of white-covered trees and hills.

Deadline Set For Keg Event

Midnight, April 7, is final hour for GD/Convair and GD/Electronics bowlers to enter the annual CRA plant championship bowling tournament, warns CRA Commissioner Jim Hayman.

The annual bowling contest will be held the weekends of April 20-21, and 27-28, at Pacific Recreation.

Entry blanks are on hand at CRA office, Bldg. 32, Plant 1, and at all alleys where CRA leagues roll—Pacific Recreation, Victory Lanes, Mission Valley Bowlero, Clairemont Bowl, Frontier Lanes, University Lanes, Tower Bowl.

Keglers may enter women's or men's doubles or singles; mixed team events. Prizes will be awarded to high scorers in each division.

Summer league bowling is swinging into action at four San Diego alleys, said Hayman. GD/Convair and GD/E men and women may contact the following men to register:

Tuesdays, University Lanes—D. D. Dimmitt, ext. 511, Plant 1.

Wednesdays, Pacific Recreation—J. D. Hayman, 466-1262.

Thursdays, Frontier Lanes—Hayman.

Thursdays, Victory Lanes—F. Colianna, ext. 1126, Plant 1.

GD/Electronics Girls Organized For Golf

GD/Electronics fair sex intend to give the men some competition on the links as they organize their own ladies' golf program.

Free instruction is open to all GD/E women, and any from GD/Convair who wish to take part, every Tuesday and Wednesday evening at Mission Bay Golf Center's driving range from 6 to 7 p.m.

Teaching correct form is Ernie Paul, president of GD/E men's golf club.

Only cost is regular charge for balls. Clubs may be rented at the course.

Foursomes now are being formed for organized club matches. Registration or information may be obtained by calling either Mary Ranson, ext. 2050, or Peggy Tracy, ext. 1476, both GD/E, Plant 1.

Astro's Volleyball Team Topples GD/E

Astro Dynamics volleyball team beat GD/Electronics players in finals of the pre-season IRC tourney in March 26 play.

Tournament games opened last week (March 27) and will be played each Wednesday and Thursday night on Balboa Park's Muni Gym courts. Two teams from Astro, one each from GD/E and Convair are vying in the IRC competition.

LENS BUGS TO SHOOT AT JOINT MEETING

Camera fans from CRA and ARA groups will join in "shooting" eye-catching subjects at their combined meeting Sunday (April 7) at 7:30 p.m. in Balboa Park's Photo Arts Bldg. Models will be finalists in the ARA queen contest.

Tryouts Scheduled In 'Fast Pitch' Loop

Tryouts for a combined GD/Convair-GD/Electronics softball team, to play in "fast pitch" city league competition, are slated for this Friday evening (April 5), 7 p.m., at Cabrillo Field.

Pete Beyrer of CRA urges all GD/Convair and GD/E ball players to turn out. Three or four practice games will prepare the team for the preseason tourney the first of May. League plays starts the first of June.

Sam Frankel of GD/Electronics will be manager of the plant team.

Walker Joins Pistol Team

W. G. Walker of Dept. 6 has joined the pistol team which will represent the CRA club in competition for the next three months.

He is only new shot on the team of four. Holdovers, by virtue of their aggregate scores during the last quarter are: J. L. Williamson (Dept. 401), 808; Jim Halfacre (Dept. 140), 796; Vern Mardis (Dept. 34), 782. Walker shot a 752 to replace Commissioner Ash Bishop on the select group.

The team will have its first contest against ARA pistol team in an inter-division match April 14.

Williamson took first spot in both the .22-cal. Police Course and .45-cal. Short National at the club's March 24 shoot. His 12 bull's-eyes broke a tie with Halfacre for first in the Police Course event. Both shot 288s. Walker was third with 283.

Williamson and Halfacre, usually neck-and-neck in pistol competition, stood one-two in the Short National with Williamson's 260 just one point ahead of Halfacre's score.

Lake Murray Trout Wins Feb. Contest

Ruth Menzie topped all CRA fishermen in the February contest to take first place with a 14⅜-in. trout caught at Lake Murray.

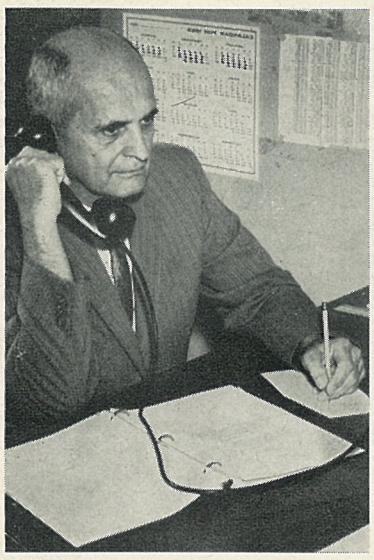
Mrs. Menzie, wife of Commissioner Menzie, won the $10 cash award for best catch. Honorable mention went to Anthony Pomire of GD/Convair for a 14-in. trout, also taken from Lake Murray.

Two cash prizes will be given every month, beginning in April, through the next seven months of the summer fishing contest which coincides with the annual Yellowtail Derby, said Menzie. First prize is $10; second, $5.

Members of CRA Fishing Club will meet April 16 for their regular monthly potluck at 6:30 p.m., followed by 7:30 business session, at Gillespie Field Clubhouse.

SWIMMING NIGHTS HALT FOR APRIL

Family swim night for GD/Convair and GD/Electronics people at Mission Beach Plunge has been cancelled for the month of April, said Pete Beyrer of CRA office. The pool is booked up for other events and no Saturday night is available. Monthly swim nights will resume in May.



EX-SKIPPER—J. R. Pahl, chief librarian at GD/Pomona, was commanding officer of first USS Tattnall. Second ship by that name will be Tartar-armed destroyer.

First Tattnall

FORMER SKIPPER NOW AT POMONA

James R. Pahl, chief librarian at General Dynamics/Pomona, has more than a passing interest in the name given the Navy's newest Tartar-armed destroyer, USS Tattnall. He should. Pahl at one time was commanding officer of the first ship bearing that name.

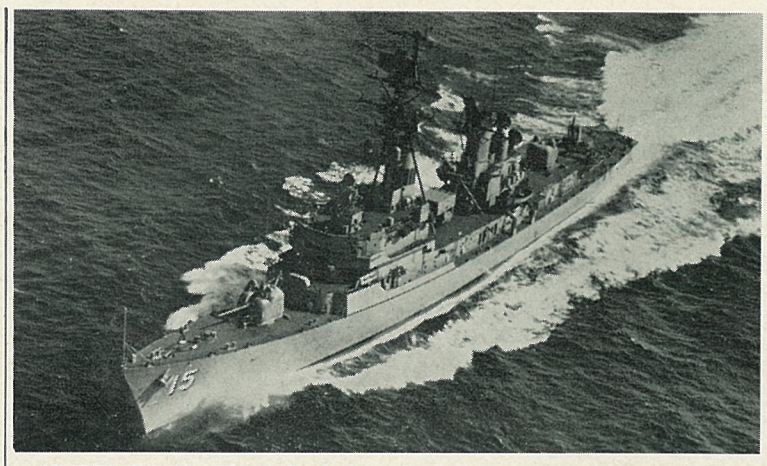
Pahl is a retired rear admiral, U.S. Navy. As a lieutenant he served as commanding officer of USS Tattnall (DD-125) from June 7, 1939, to June 25, 1940. The ship was then operating with a Special Service Squadron in the Canal Zone.

Pahl later saw action in the South Pacific from 1943 to 1945, during which time he won the Silver Star, the Legion of Merit with Gold Star and Oak Leaf Cluster, and the Bronze Star. He has been at GD/Pomona since 1954.

Terrier, Tartar Fleet To Increase to 39

USS Tattnall (DDG-19) will be the 18th Tartar-armed warship to join the Navy's growing fleet of missile ships and the 39th ship armed with General Dynamics/Pomona-built missiles.

Tartar missiles now arm 16 destroyers and two cruisers. Advanced Terrier missiles arm 21 ships which include two carriers, two nuclear-powered ships, five cruisers and 12 frigates.



UNDER WAY—Third Berkeley class Tartar-armed destroyer will join fleet following traditional commissioning ceremonies for USS Tattnall (DDG-19) at Charleston April 13. USS Berkeley (DDG-15) is pictured here during sea trials.

Another Tartar-Armed Warship to Join Fleet

The U. S. Navy will gain another Tartar-armed destroyer April 13 when USS Tattnall (DDG-19) is commissioned at Charleston, S.C.

General Dynamics/Pomona, prime contractor for the Tartar surface-to-air missile, will be represented at the ceremony by T. D. Brown, manager of Navy contract administration. Brown, on behalf of General Dynamics, will present a set of ceremonial stanchions to the ship.

The new guided missile destroyer is the second ship of the fleet to be named in honor of Capt. Josiah Tattnall, U.S. Navy and Confederate States Navy.

Born Nov. 9, 1795, on the family estate "Bonaventure," a few miles below Savannah, Ga., he served on board the frigate Constellation during the War of 1812. During the Mexican War he exhibited great daring in action at Vera Cruz. In 1859 he commanded the East India Squadron which supported negotiations of new treaties with China by Occidental powers.

Tattnall remained loyal to his native state of Georgia and resigned his commission Feb. 20, 1861. He was appointed a senior flag officer of the Georgia Navy and later became a captain in the Confederate States Navy. He commanded naval defenses in waters of Virginia, hoisting his flag on the iron-clad CSS Virginia (ex-USS Merrimac). The ship was burned to prevent capture when Norfolk was abandoned.

The first Tattnall (DD-125), placed in commission at Philadelphia Navy Yard June 26, 1919, length of 314 feet, normal displacement of 1,213 tons, design speed of 35 knots and a complement of 8 officers and 105 men.

During World War II, the first Tattnall served on patrol and escort duty until July 13, 1943, when the ship entered Charleston Navy Yard for conversion to a high-speed transport. Classification was changed to APD-19.

Tattnall (APD-19) earned battle stars for Elba and Pianosa landings during operations on west coast of Italy, landings during invasion of Southern France and assault on Okinawa Gunto. The ship was decommissioned Dec. 17, 1945.

The second Tattnall (DDG-19) was constructed by Avondale Marine Ways, Inc., New Orleans, La. The keel of the guided missile destroyer was laid Nov. 14, 1960, and the ship launched Aug. 15, 1961.

Engineers Co-Author Article on Alloys

Four General Dynamics engineers are listed among the five authors of a major article, "Structural Alloys for Cryogenic Service," in the current issue of Metal Progress, monthly journal of the American Society for Metals.

The article details significant improvements in the low temperature properties of commercial alloys by controlling degree of cold work, thermal treatment, alloy content, and impurity level.

GD men joining in research and compilation of the article are J. L. Christian, W. E. Witzell, Abraham Hurlich of GD/Astronautics, and J. F. Watson of General Atomic division. Fifth author, J. E. Chafey, now with Fairchild Stratos Corp., was formerly with GD/Astro.

Successful Pod Drops End Kirtland Program

A pair of high-altitude, high-speed pod drops recently closed out a "very successful" multiple weapons pod drop program for GD/Fort Worth at Kirtland AFB.

"This was a smooth running program from the start," said R. P. Andrews, team captain, who has since joined the F-111 effort. "All told, we made 33 multiple weapons drops at various speeds and altitudes."

Main purpose of the program was to determine separation characteristics and stability of the weapons, and other factors.

B-58 No. 38 was used throughout the program, with a crew of Fred Voorhees, pilot; Fred Hewes, navigator; and Ken Timpson and O. D. Lively, defensive systems operators.

With the program closing out on schedule, virtually the entire GD/Fort Worth contingent at Kirtland AFB moved back to Fort Worth. GD/Fort Worth has had an office at Kirtland for this and other programs since 1957.

W. T. Tally is remaining at Kirtland to handle supplies and other matters.

Hustler No. 38 was returned to GD/Fort Worth following the tests and will continue multiple weapon stability and control flights for about 90 days from Fort Worth, with the exception of a pair of two-component pod flights over Eglin Gulf Test Range.

The two flights over the Gulf will be made at high altitude and at near-maximum speed.

Quality Control Seminar Set

"Space Age Quality—Brought Down to Earth" will be the theme of the third annual seminar of the San Diego Section, American Society for Quality Control, set for April 20 at California Western University.

Among those taking part in key roles will be J. Y. McClure, corporate director of reliability and quality control, P. I. Harr, GD/Astro director of reliability control, plus a number of other ranking members of aerospace and military organizations.

Co-chairmen for the affair are W. J. Wilkinson, San Diego Contract Management District, AF Systems Command, and M. R. Seldon, Astronautics.

General Dynamics employees at Astro, Convair, Electronics and Pomona may secure tickets through their local representatives of the American Society of Quality Control.

PAYOFF OF SAFETY IN COSTS OUTLINED

Phil I. Harr, director of reliability control, represented General Dynamics/Astronautics at the third Ballistics Systems Division—Industry Safety Management Conference March 12 at Norton AFB.

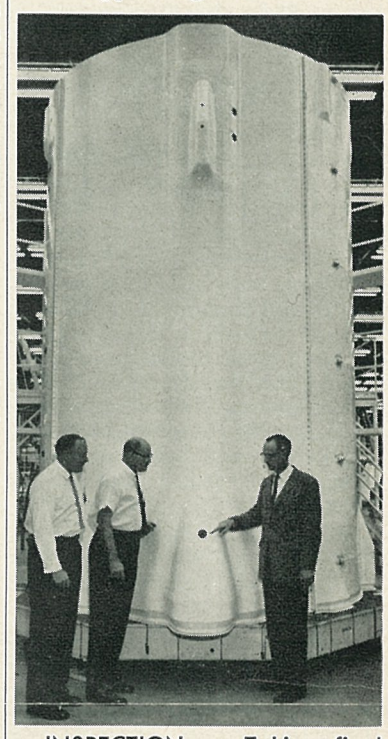
Also taking part was I. E. Wissner, acting manager of reliability control systems safety.

Harr presented an analysis of potential cost reduction from application of safety engineering principles at Astro, pointing out that the actual measure of system safety adequacy is in the areas of logistics and maintenance costs.

GD/FW Building Insulation For Centaur Tanks

Insulation built at General Dynamics/Fort Worth will be included on the Centaur space vehicle during future space shots.

The Fort Worth division is making special insulation panels which will encapsulate the Centaur upper-stage vehicle fuel tanks during launch.



INSPECTION — Taking final look at Centaur panels before shipment to GD/Astronautics are, from left: J. E. Topliff, E. H. Callan, and W. A. Bratton, GD/Fort Worth.

In addition, GD/Fort Worth is designing, and will eventually manufacture, several sets of lighter weight insulation panels which will go on production Centaur models.

The first five of these fiber glass, foam-filled honeycomb panels — prototypes of a refined version to be used in later space missions — were shipped to General Dynamics/Astronautics in December.

The panels are 18 feet long and 8 feet wide. They will be spliced together to form a thermal barrier preventing heat absorption and reducing boil-off of liquid hydrogen and liquid oxygen in fuel tanks prior to and during the launch operation.

"Ultimately, the panels will be jettisoned in space to reduce weight and increase payload capability for the vehicle in space," said W. A. Bratton, acting project engineer.

Bratton pointed out that special redesign provisions were incorporated in these panels to avoid difficulties met in the first launch.

E. H. Callan of tooling projects coordinated tooling and assembly operations on this set of panels; E. C. Costantino, Dept. 35, handled honeycomb foaming and bonding operations; and J. E. Topliff, general foreman, Dept. 41, supervised assembly operations.

Canadian Attache Pays Pomona Visit

Capt. V. W. Howland, RCN, assistant naval attache to the Canadian embassy in Washington, D.C., visited General Dynamics/Pomona March 22.

Captain Howland, who was accompanied by LCdr. A. P. Campbell of his staff, was briefed on Tartar and Mauler production facilities at the Pomona division.

Recreation Area at Fort Worth Reproduced in Authentic Replica

The ingredients: toothpicks, wire, pinheads, plywood, papier-mache, sandpaper, silk hose, textone, cardboard, twigs, lichen, sponge, and glue.

The architects: Glenn Carter and Clay Price, GD/Fort Worth Recreation Association ice skating and model airplane commissioners.

The result: an amazingly authentic 3½-by-8-foot replica of the GD/FW Recreation Area, made meticulously to scale, even down to a tiny model airplane.

"We worked about 4½ months on the project, starting last October," said Price. "I'd say we averaged about three nights a week and most weekends."

Both builders are professional engineers and prided themselves on getting things to a 1-inch-equals-40-feet scale.

"A six-foot shrub, for example, measures out at about one-seventh inch," Price said. "We had to make virtually every building and fixture ourselves, since none of the items was sold commercially."

Papier-mache and textone were placed over the contoured base of plywood and wire mesh. The surface was then painted green for grassy areas, black and brown for roads and parking areas, and blue for rivers and ponds.

The junior baseball diamonds are replete with wire-mesh backstop, fine-wire fences, and lighting systems made of toothpicks topped by pinheads to represent banks of lights.

The fieldhouse and clubhouse are made of block wood, configured authentically and topped with sandpaper to simulate a gravel roof. Shrubbery was formed mostly from lichen (a small plant growth) or sponges, cut to shape and painted. Trees were made by gluing lichen to small twigs.

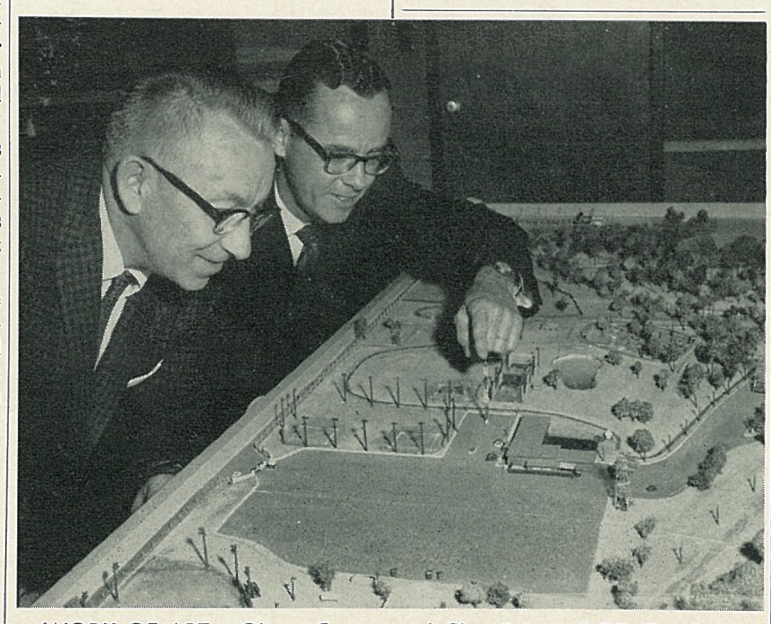
Down in the picnic area, the GD/FWRA Express is ready to roll. The engine and all three cars are built painstakingly from match sticks! In the middle of the track, of course, is the miniature golf course, with its colored-paper putting surfaces.

At one end of the layout stands the ranch area: ranch house, barn, caretaker's house, horse stall, arena (complete with catwalk and judges stand).

Tennis enthusiasts note with pride the faithfully duplicated lighted courts, with nets made from women's silk hose.



"Go ahead! He's on the club payroll."



WORK OF ART—Glenn Carter and Clay Price of GD/Fort Worth pridefully examine their handiwork, a marvelously authentic reproduction of GD/FW's recreation area.

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GD

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and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

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NEW GD/E OFFICES—Centralized location of GD/Electronics industrial relations functions was occupied first of month on Bldg. 51, Plant 1, ground floor. In background are George Leesch and George Oatman. Gloria Schneider, employment clerk, works at center desk, while Millie Buffat, security clerk, stands at files. Agnes Faught, insurance and retirement clerk, waits on R. D. Tuttle at counter.

GD/E Industrial Relations Located in New Bldg. 51 Site

Industrial relations department of General Dynamics/Electronics has established central headquarters to more conveniently serve all GD/E employees in San Diego facilities, announced J. W. Swank, industrial relations manager.

Offices are located on the first floor of Bldg. 51 at Plant 1, adjacent to the reception lobby.

George Leesch has responsibility for wage and salary and employment functions. Applicants will enter by Gate 10 from Pacific Highway and new hires will be processed by the GD/E employment office.

Gloria Schneider, employment clerk, is in charge of personnel records.

George Oatman oversees employee services, including insurance, retirements, selective service, Con-Trib-Club, and also coordinates in-plant labor relations and industrial security.

Millie Buffat is security clerk and Agnes Faught, insurance and retirement clerk.

Juanita Jones is industrial relations contact at Plant 2 (Hancock St. facility) and will supply forms to GD/E employees at that site.

Swank, and his secretary, Nancy Ellis, also are located in offices within the new area.

Telephone extensions are 2583, 2584, and 2585.

FAA Conducts Close Inspection Of Jet Production Facilities

A clean bill of health for commercial jet transport production facilities at General Dynamics/Convair is anticipated following last month's exhaustive inspection by a Federal Aviation Agency board.

W. J. Martin, director of reliability, and G. A. Covington, manager of quality control report that they are confident of complete approval of the division's capabilities and facilities, as indicated by verbal summary of the FAA Triennial Production Certification Board.

"Few discrepancies were pointed out during the board's rigid survey," said Covington. "Corrective action has been taken on all requested items and written notification will be submitted to the FAA immediately."

At GD/Convair March 26-29 for minute examination of plant facilities, capabilities, and procedures as they concern production of commercial transports were: Charles R. Hawks, chief, engineering and manufacturing branch of Western Region Office, Los Angeles, chairman; T. J. Butters, chief, manufacturing inspection section; C. I. Blomer, aerospace engineer; A. M. Bonanno, mechanical engineer; T. F. Curran, aerospace engineer; Carl Jacobson, flight test pilot/specialist; L. R. Dilbeck, manufacturing specialist, all from Los Angeles; V. E. Sage, representative from Washington, D.C.; L. E. Safford, supervising inspector; Michael Brega, J. C. Butler, J. H. Creighton, manufacturing inspectors, San Diego; R. W. French, manufacturing inspector, Santa Monica; G. L. Lincoln, manufacturing inspector, Sun Valley; and Richard J. Bowers, supervising inspector, from Long Beach office.

New Liquid Carbonic President Appointed

Appointment of John A. Edwards as president of Liquid Carbonic Division of General Dynamics Corporation was announced last week by Roger Lewis, president.

Edwards, a veteran of 23 years in the compressed gas industry, succeeds John F. Thurston, who has left the company. Edwards was formerly executive vice president. Division headquarters are in Chicago.

At the same time, Lewis announced appointment of Laurence F. Davaney as vice president-United States operations of Liquid Carbonic.

Ticket Sale to Begin For Mgt. Club Dance

Tickets go on sale tomorrow (April 18) for the Management Club's annual spring dance.

The "May festival," as this year's affair is described, will take place at the new Torrey Pines Inn on Highway 101 the evening of Saturday, May 18.

Sponsoring department, material and production services, with Art Ratz, general chairman, promises special entertainment and lots of fun for all GD/Convair and GD/Electronics members and their guests.

Tickets at $2.50 per couple, are available at all ticket outlets and from Management Club Boosters throughout all facilities.

Cut Continuing In Paperwork

Drive to slash paperwork is receiving an added punch at GD/Convair with a Paperwork Reduction Board to review and direct elimination of excess reports.

D. C. Wilkens, director of industrial relations; W. R. Bruce, director of operations; A. J. Chitiea, controller, comprise the board, appointed by President J. H. Famme.

This week they are examining paperwork originating in all division departments. Each department must submit a report identifying each piece of paper it handles and the path it follows through the department. Next step will be a schedule showing which items can be eliminated, reduced, combined, or simplified.

All will report back to the board by June 1 on accomplishments, savings, and budget reductions.

"Every piece of paper in the division requires effort to originate, reproduce, process, deliver, and file," said Famme. "Every unnecessary or 'nice to have' but not essential piece of paper costs us money—money that we can ill-afford to spend. Therefore, we are declaring an all-out war on unneeded paper!"

U.S. ARMY CONTRACT CONTINUES REDEYE

A $1,242,000 contract for continued development of the Redeye missile system was awarded April 9 by the U.S. Army to General Dynamics/Pomona. The contract is in addition to one for $937,000 announced March 22.

Redeye, a new infrared surface-to-air guided missile system, is being developed for the U. S. Army and Marine Corps by General Dynamics/Pomona. The shoulder-fired Redeye will enable ground troops to retaliate against low-flying aircraft.

Redeye's launcher tube houses a composite missile of solid fuel propellant, infrared guidance system and high-explosive warhead. It weighs about 20 pounds and is man-transportable.

Famme Will Map Division Future

President J. H. Famme will review GD/Convair's accomplishments during the past year and explain plans for the future at tonight's (April 17) meeting of Management Club members and their ladies.

Site of the dinner meeting has been changed to El Cortez Hotel with social hour at 5:30 and dinner at 6:30 p.m.

The program originally scheduled for this month's Management Club meeting has been postponed until June, announced the club board of control which is making arrangements for tonight's special event. General chairman is L. G. Lawson.

Famme also will present the annual President's Award to the winner of yearly cost reduction honors. Mug of the Year will be named and MacSave-it trophies given for February and March. Results of the club's election of officers will be disclosed.

Price of dinner is $2 per person with tickets still on hand at ticket outlets throughout GD/Convair and GD/Electronics plants.



J. H. Famme

GD/Convair Change Board Aligned With Division Value Techniques

General Dynamics/Convair's Change Board, responsible for processing engineering design change proposals, is being closely aligned with the division's value control organization in a step-by-step direction of effort to meet all value engineering requirements now included in Air Force and Armed Services procurement regulations.

Key personnel of the Change Board and the affiliated ECP (engineering change proposal) coordination committee which schedules and monitors incorporation of design changes, will be well versed in value control principles and techniques through GD/Convair's continuing seminar program.

L. C. Beckett of program planning and control, Change Board chairman, who headed a group completing the full workshop early this month, said, "We are most anxious that every member of the board and ECP committee becomes thoroughly acquainted with value engineering techniques so that we may comply in every way with military requirements.

"Our knowledge and understanding of value control, as it applies to our value engineering change proposals, will make possible expedient action as demanded by procurement regulations."

J. G. Dumas of GD/Convair spares contracts reiterated the importance of value control training as a pertinent asset to his function's responsibilities in surveying proposals for spare parts contracts: "It is our prime duty to push costs down to the absolute minimum so we will be in the top running for contract work. Every hard look we can take at dollars and cents will give us that much more advantage."

Future seminars will indoctrinate personnel who will be reviewing specifications for removal of unnecessary costs, said H. P. Williams, GD/Convair value control manager. Systems and procedures is surveying division procedures for possible revisions to comply with military value engineering requirements.

Score Finish 14th Seminar

Twenty GD/Convair men, divided into four teams, completed the division's 14th value control seminar early this month.

Projects assigned during the 40-hour workshop, March 26-April 5, included two on a current Air Force spare parts contract and two on C-141 components.

Initial review showed that considerable savings could be realized in all areas with one team recommending that a full-time value control task team be assigned to one of the projects for a two-week period for quick development of cost savings.

Team members, departments, and project leaders were:

No. 1, AF contract: Lou Beckett (5), Jack Dumas (15-0), Tom Allen (42-5), Joe Penner (400-2), Clayton Lang (6). Project leader, Claude Bissell.

No. 2, AF contract: R. G. Clayton (6), F. H. Harding (5), B. R. Kooperman (6), C. F. Uhl (171), B. J. Wood (93). Project leader, Bissell.

No. 3, C-141 elevator leading edge: L. D. Fouche (48-01), G. J. Kick (400-3), H. B. Millman (101), Ken Samples (6-2), W. M. Thomas (6-2). Project leader, K. C. Atkin.

No. 4, C-141 horizontal stabilizer leading edge: G. H. Blain (34-5), T. J. Buchanan (6), C. B. Ohman (6-2), C. H. Plummer (97-2), S. S. Stearns (171). Project leader, Atkin.

Next seminar starts Monday, April 22.

REGISTER NAMES FOR PADRE DRAW

Baseball fans at GD/Convair and GD/Electronics will have their first chance for free tickets, courtesy of CRA, to Padres home games at the first drawing of the season, set for April 24.

J. K. Field, GD/Convair manager of personnel services, reports that lucky winners, whose names are drawn from the hat that day, will get ducats to one of the nine home games scheduled between April 26 and May 16.

Padres will meet Salt Lake City at Westgate ball park on April 26, 27, 28; Portland, May 10, 11, 12; Seattle, May 14, 15, 16.

Entries must be at employee services, Bldg. 32, Plant 1, by noon of next Wednesday. They may be dropped in the baseball drawing box on the insurance counter, or sent by in-plant mail to Baseball Tickets, Zone 3-20.

Each entry must include full name, clock number, shift, department number, location, plant phone extension. Only one entry to a person is allowed.



FAA SURVEY TEAM—Federal Aviation Agency Triennial Production Certification Board summarizes findings of inspection of GD/Convair commercial transport production capabilities following March 26-29 plant visit.



VE CHECK—Lou Beckett, GD/Convair Change Board chairman; H. P. Williams, value control manager; Jack Dumas of spares contracts check Air Force value engineering requirements with C. R. Hampton (center), industrial specialist with San Diego AF Contract Management District.

Astro Seeking $140,000 Slash In Phone Costs

"A realistic evaluation of actual requirements" is seen as the key to slashing a dramatic $140,000 annually from telephone costs at General Dynamics/Astronautics.

Since early this year, representatives of Pacific Telephone have been surveying GD/Astro departments to determine what equipment is actually needed to provide adequate service at minimum cost.

Supervision plays a vital role, by cooperating in realistically analyzing needs of their groups.

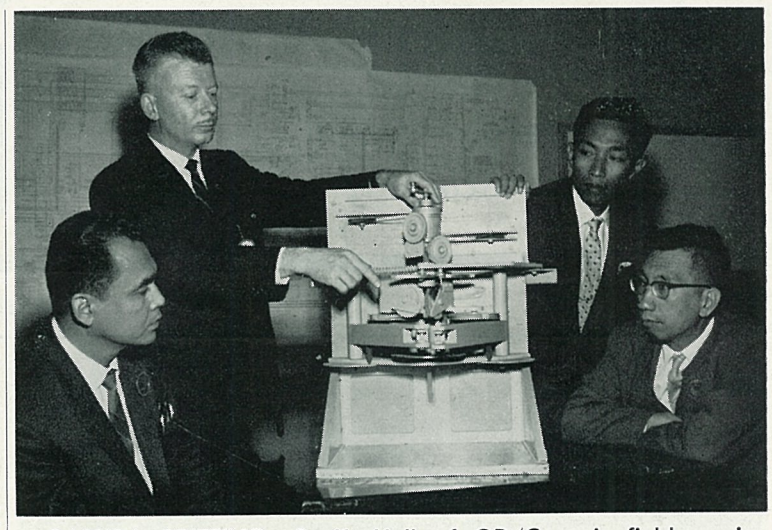
"The survey is one phase of a continuing program to eliminate unnecessary telephone costs at GD/Astro," explained J. H. Johnson, director of management systems.

Johnson pointed out that a basic installation — one line, one instrument—costs only $1.50 per month. Each additional line with attendant "push buttons," signals, etc., plus associated equipment required to operate it, increases the cost drastically.

"Obviously, one person can use only one line and instrument at one time. Only five calls can be received at once in an area served by five lines—regardless of how many instruments are available," Johnson noted.

"We have no intention of compromising service where it is needed. However, we do hope to trim costs by eliminating equipment at any point where it exceeds actual need."

Approximately $3,000 per month was trimmed from telephone costs by the survey in its first two months of operation.



GARUDA BRIEFING—R. K. Hall of GD/Convair field service explains jet transport aileron spoiler mixer mockup to Garuda Airways officials during 990A orientation at San Diego. From left are Captain Partono, Garuda president; Hall; Mr. Hariadi Sudjono of Indonesian Dept. of Civil Aviation; Dr. Yap Kie Tik, Garuda vice president.

Study Abroad

Convair Son Off to Italy

GD/Convair son, Carl Cheney, is living his career goal of "international relations" as he goes to Europe for the second time to become intimately acquainted with the people and customs of another country.

Carl, 19-year-old son of Harold Cheney, Little Joe II deputy program manager-launch operations, arrived in Florence, Italy, late last month to begin a six-month session under the Stanford Overseas Campus program.

Stanford students, chosen for the special course abroad, live in an Italian villa maintained as the school's headquarters and study the language, economics, and history of Italy. All of the young people were specially selected on a basis of personality, scholarship, adaptability.

Carl is well-equipped to adjust himself to other customs and peoples from his experience three years ago when he was accepted as a member of an Aachen, Germany, family through the American Field Service exchange program for high school students.

He was winner of the GD/Convair Management Club scholarship in 1961 and is now a sophomore at Stanford University. Last summer he was employed as an engineering aide in Astro Dept. 577-7, data systems development group.

GARUDA OFFICIALS VISIT SAN DIEGO

Three Indonesian officials left San Diego last week after two weeks at General Dynamics/Convair consulting on training and provisioning requirements for Convair 990As destined to join Garuda Airways this fall.

Garuda's president, Captain Partono; Dr. Yap Kie Tik, vice president of maintenance and engineering; and Mr. Hariadi Sudjono of the Indonesian Department of Civil Aviation received 990 staff orientation during the March 26-April 10 visit.

Discussions with division officials centered around pilots' ground school and maintenance training, spares provisioning, and engineering changes.

Coordinating arrangements at GD/Convair was R. K. Hall of commercial field service, who became acquainted with Garuda Airways personnel during negotiations at Djakarta.

Log Book Entries



Latest GD/Convair men to receive 25-year service emblems are Jess R. Brown, Dept. 27-1, left, and Frank A. Dernbach, Dept. 140.

Service Emblems

CONVAIR

Service emblems due during the period April 16 through April 30.

Thirty-five-year: Dept. 140, D. E. Wilkinson.

Twenty-five-year: Dept. 25-5, J. V. Salter; Dept. 133, August Yorges; Dept. 140, L. E. Brown; Dept. 141, O. A. Correil.

Twenty-year: Dept. 14-7, J. E. Schultz; Dept. 16-1, Gertrude S. Hunter; Dept. 44-4, Everett Brogan; Dept. 48-00, W. J. Martin; Dept. 102, Joe Butera; Dept. 115, P. N. Nelson; Dept. 133, W. F. Wittfoth; Dept. 140, P. E. Thomas; Dept. 171, E. F. Arnaud, L. E. Reich.

Fifteen-year: Dept. 6-3, L. M. Goodloe; Dept. 14-4, Mildred K. Erwin; Dept. 25-1, A. S. Ojeda; Dept. 42, D. C. Constantino, O. D. Rothstein; Dept. 101, Luvin Gomes; Dept. 115, Ava C. Durden; Dept. 133, A. V. Pimentel.

Ten-year: Dept. 6, R. K. Jepperson, Donald Moore, G. H. Perry; Dept. 16-1, J. C. Daynes, Dorothy Terrell; Dept. 25-2, W. L. Douglas; Dept. 48-12, L. W. Williams; Dept. 115, C. M. Emry; Dept. 119, F. H. Felchlin.

GD/ELECTRONICS

Fifteen-year: Dept. 32-00, Mary I. Burgess.

Ten-year: Dept. 20-00, H. F. Johnson; Dept. 22-00, B. D. Beasley; Dept. 71-00, L. L. Schultz, L. E. Tescher; Dept. 74-20, G. L. Hale.

Deaths

CONVAIR

SCHULTZ—John E., Dept. 14-7, died March 31. Survived by wife, Frances, and two sons.

GD/ELECTRONICS

SIEBENALER — Donald A., Dept. 11-00, died March 28. Survived by wife, Marjorie; daughter, Lynn; son, William E.; mother, Mrs. Lucie Arnett; brother, Frank F. Stevens.

Personals

CONVAIR

Your kindness and sympathy at the death of our husband and father, C. H. (Tex) Clements, will always be held in grateful remembrance.

Millie and Christy Clements

* * *

Your kind expressions of sympathy upon the death of my husband are deeply appreciated and gratefully acknowledged.

Mrs. Nicholas L. Carter and Judy.

GD/ELECTRONICS

The family of Donald A. Siebenaler deeply appreciates the kindness and sympathy shown us in our recent loss.

Marjorie Siebenaler
Frank F. Stevens

Retirements

CONVAIR

GUNN—Aubrey H., Dept. 21-1. Seniority date June 26, 1951, retirement effective March 31, 1963.

LAUBMAYER—Harold C., Dept. 25. Seniority date Nov. 21, 1950, retirement effective Dec. 28, 1962.

MARTIN — Joe, Dept. 14-4. Seniority date Jan. 24, 1952, retirement effective March 29, 1963.

MOGHABGHAB—Ernest S., Dept. 204. Seniority date Aug. 14, 1950, retirement effective March 29, 1963.

OGLETREE — Walter I., Dept. 218. Seniority date Nov. 17, 1947, retirement effective Dec. 25, 1962.

THUNEMAN — Carl B., Dept. 91-0. Seniority date Nov. 17, 1942, retirement effective March 29, 1963.

WILLIAMS—Frank, Dept. 171. Seniority date Dec. 21, 1950, retirement effective March 8, 1963.

Awards

CONVAIR

Empoyee Suggestion awards approved for periods ending March 29 and April 5.

Dept. 14, J. A. Chavez, $56.20.

Dept. 42, L. L. Sowles (two awards), $60.70, $30.

Dept. 101, C. E. Alexander, $28.50.

Dept. 102, F. Martin, $13.20.

Dept. 115, A. H. Burnett, $10.

Dept. 171, G. A. Hasti, $29.20; S. S. Stearns (two awards), $42.50, $20.

Dept. 400, S. W. Kellogg, $100 (partial payment); H. S. Marshall, $10.

Cost Improvement Proposal for week ending April 5.

Dept. 171, R. J. Ratliff.

GD/ELECTRONICS

Employee Suggestion awards approved for period ending March 15.

Dept. 71-0, B. G. Allen, $69.85.

Dept. 72-0, S. Munoz, $10.

Births

CONVAIR

DAVIS—Daughter, Denise Carol, 9 lbs., 14 oz., born April 5 to Mr. and Mrs. R. C. Davis, Dept. 16.

GD/E Plans Display Of Animated 4020

General Dynamics/Electronics-San Diego will display at the coming 12th annual meeting of the National Microfilm Association the end of this month at San Francisco.

The booth will feature an animated model of the S-C 4020 high-speed computer recording system. GD/E men manning the booth during the April 30-May 2 meeting will be Payne Johnson, manager of communication; George McGinley, manager of industrial commercial requirements; S. R. Viejo, manager of requirements research.

Also, a paper, "Microfilm—An Output Medium for Digital Computers," will be presented by GD/E's Wynne H. Jones during the last day's sessions.

Readiness Record For F-102s Praised

F-102s assigned to Yokota Air Base, Japan, with the 40th Fighter-Interceptor Squadron, last month marked a whole year without a NORS (not operational ready for supply) condition.

Lt. Col. L. P. McIntosh, squadron commander, praised the maintenance and supply people for making the record possible.

Congratulations also came from Col. Lee Hawel Jr., 41st AD commander: "This is decidedly more than a job well done and reflects superb operations and supply management."

J. R. McMahon and D. E. Horeish are field service representatives for GD/Convair in support of F-102s at Yokota, with Rudy Haas, based at Fifth Air Force headquarters near Tokyo, in overall charge of Far Eastern field service operations.

J. J. Curley, Former Astro Man, Dies

Interment with full military honors at Fort Rosecrans National Cemetery was held April 10 for J. J. "Mike" Curley, former executive development administrator at General Dynamics/Astronautics.

Curley, U.S. Naval Academy graduate and retired Navy captain, died April 10. He joined Convair in 1951 and retired at Astronautics early this year.

DR. DAVID MEISTER TO DISCUSS 'ERRORS'

Dr. David Meister, GD/Astro Dept. 652-4, will be guest speaker at a meeting of Ryan Management Club May 16. He will discuss "Production Errors."

Electronics Wives To Lunch April 18

GD/Electronics wives will gather tomorrow (April 18) for their spring luncheon at Vacation Village, Mission Bay hotel.

All wives of GD/E personnel in San Diego are urged to attend the get-acquainted gathering, with social hour at 12:30 and luncheon at 1 p.m. Price is $2.50.

Reservations may be called to Mrs. Richard Barnett, home phone, 273-4451, or to Mrs. Roy G. Bond, 466-3640.



ITALY-BOUND—Carl Cheney, GD/Convair son selected to attend Stanford Overseas Campus, kisses mother, Mrs. Harold Cheney, good-bye as he boards plane for trip to Florence, Italy. Gathered to see him off are father, grandparents, Mr. and Mrs. Clair Cheney, sisters Linda and Ginger, brother Bryan.



SEMINAR "GRADUATES"—Included in group are part of 35 GD/Convair men who completed value control seminars Nos. 13 and 14 in continuing program. Next seminar starts April 22.

General Dynamics NEWS

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Divisional Cooperation On Problems Urged

General Dynamics divisions must assist one another in the solution of potential or real problems in order to achieve a high degree of product quality.

So said J. Y. McClure, General Dynamics director of reliability and quality control, at a GD Panel on Reliability and Quality Control meeting at GD/Forth Worth April 1 through 3.

"Many of these problems are mutual," McClure said. "Keep in mind that our company has consultants and experts in many fields of endeavor.

"These experts are available if we simply ask for their services. Please do not let pride or autonomy stand in the way of seeking division or corporation assistance."

McClure's keynote speech was one of several general presentations at the meeting, which included:

"Reliability and Quality Assurance," T. Johnstone, Vickers Corp., Detroit; "NASA Reliability and Quality Assurance," J. T. Koppenhaver, director office of reliability and quality assurance, Hqs. NASA; "F-111 Weapon System," J. T. Cosby, GD/FW vice president and F-111 program director; "Corporate Procurement of High Quality Parts," W. G. Evans, corporate director of materiel; "Air Force Organization and Contractor Relations," C. C. Hargrove, deputy chief Air Force quality control, GD/FW.

"F-111 Maintainability," E. D. Mathis, manager of support requirements, GD/FW; "Quality Control of Technical Manuals," W. E. Magnuson, GD/Astronautics; "Industry Participation in Government Committees," E. S. Winlund, GD/Astronautics.

"Product and Reliability Control at GD/Electro Dynamics," N. T. Bonner, GD/ED; "Product Data Processing Center," E. C. Cauthen, GD/FW process control supervisor.

E. R. Weiher, GD/FW manager of quality control, hosted the event; Frank W. Davis, GD/FW president, made opening remarks.

W. J. Martin, GD/Convair director of reliability, was named chairman of the quality control panel, replacing E. J. Behney, resigned.

Others attending the meeting were: John Holland, director quality control, GD/Electronics-Rochester; R. J. Cary, manager-engineering services, GD/Electronics-San Diego; H. L. McKeown, director quality control, Canadair-Montreal; C. W. Holden, manager, quality control and inspection, Stromberg-Carlson; T. Dunn, assistant general manager-reliability, Electric Boat; O. R. Goode, quality control manager, Electric Boat.

N. H. Simpson, director quality assurance, F-111, GD/FW; G. G. Sidaway, reliability engineer, Canadair-Montreal; J. C. Bear, chief of weapon systems reliability, GD/Pomona; J. W. Snodgrass, engineering manager-reliability, GD/Electronics-Rochester.

N. T. Bonner, manager of quality control, Electro Dynamic; K. Sinclair, manager quality assurance, GD/Electronics-San Diego; E. A. Cartwright, chief B-58 quality assurance, GD/FW; E. Gremley, division manager quality assurance, Vickers Inc.-Aerospace Division-Detroit.



IN SESSION — Representatives from most divisions attended Dynamics Panel on Reliability and Quality Control April 1-3 at GD/FW.





VALUE CONCLAVE—General Dynamics men at corporate Value Control Committee meeting in Chicago, Ill., March 21-22 to discuss effectiveness of GD programs are (from left) W. G. Evans, GD director of materiel; W. B. Roberson and John W. Shaffer, both GD/Fort Worth; John Hill, GD/Electronics-Rochester; E. D. Heller, GD/Astro; M. M. Reeder, GD/Electronics-San Diego; John Lindsey, Liquid Carbonic; Frank Kohrs, Electric Boat; A. S. Ross, GD/E-Rochester; W. R. Feichtinger of BUWEPS, main speaker; E. H. Conklin, GD/Pomona; Ray Golemb, Stromberg-Carlson; H. P. Williams, GD/Convair; R. J. Nash, GD/E-Rochester. Karl Mikelsons of Canadair was unable to attend. In shot at right E. W. Fedderson, GD director of manufacturing engineering and chairman, greets Feichtinger.

Booklet 'Sells' Value Control

GD/Fort Worth is "selling" value engineering throughout the U. S. through a 38-page booklet, "Value Control—the Practical Management Series."

Authored by Bill Nutt of educational services, the handy, easy-to-read effort is based on findings of some 20 value engineering seminars at GD/Fort Worth.

The illustrated booklet defines the philosophy of value control, lists step-by-step procedures for activating a value engineering plan, and presents case histories.

An estimated 8,000 to 10,000 of the booklets have been issued to a wide range of organizations —industry, universities, governmental agencies, branches of the Army, Navy, Marines and Air Force.

"We're pleased to pass along our value control experience to anyone who's interested," said Nutt, "since this technique has become a way of life not only with us, but with all our subsystems vendors."

Frank W. Davis, GD/FW president, wrote in the booklet's foreword: "Our acceptance and routine employment of Value Control . . . will largely determine the direction our future takes. In the future, only the low-cost producers can hope to have ever-increasing business on the books . . . we intend to be a low cost producer."

Copies of the booklet are available upon request to: Educational Services Section, General Dynamics/Fort Worth.

Customers Leaning Toward Incentive-Type Contracts

General Dynamics members of the corporation's Value Control Committee, meeting in Chicago, Ill., last month, learned a new word—"incentivize."

W. G. Evans, General Dynamics director of materiel, told value control delegates from nine General Dynamics divisions that they will be hearing the coined word more and more as it is used to describe incentive-type military and government contracts.

He pointed out that the Department of Defense is placing increasing emphasis on "incentivizing" bidders for governmental work by selecting only those companies who toe the "value vs. cost" mark, as he discussed in detail the inclusion of Part 17 (Value Engineering) in Armed Services Procurement Regulation (ASPR).

W. R. Feichtinger, chief of value engineering for the Navy Bureau of Weapons, Washington, D. C., as main speaker at the March 21-22 session, played the spotlight on the prime position value engineering holds in DOD's present and future planning.

He quoted from a letter written by Secretary of Defense McNamara to President Kennedy which spelled out proposed reduction of the Department of Defense budget by $3 billion over the next three years—primarily through application of value engineering principles within contracting companies.

E. W. Feddersen, GD director of manufacturing engineering and chairman of the all-Dynamics committee, called members' attention to necessity for development of a sincere and realistic value engineering/value control consciousness within all GD divisions to meet and surpass value engineering requirements of the ASPR.

All of the 14 delegates who spoke during the two-day conference discussed various methods of attaining more efficient and effective programs within the company as a whole.

Only other speaker from without the corporation was W. G. McMurry, formerly of GD/Fort Worth, who explained the value engineering organization which he has installed at Motorola, Inc., Military Electronics Division, Phoenix, Ariz., along similar lines as GD programs.

Feddersen appointed three subcommittees to expedite standardization of value control programs in all GD divisions and subsidiaries. E. H. Conklin of GD/Pomona will chair the subcommittee studying current GD value control organizations and framing recommendations for the ideal program to meet ASPR value engineering requirements.

E. D. Heller of GD/Astronautice is head of a group formulating a charter for the GD Value Control Committee.

Feddersen, himself, has assumed top responsibility of the third subcommittee which will search for means of calling attention to Dynamics' VE capability.

General Dynamics Cited for Efforts In Equal Employment Opportunities

General Dynamics Corporation was one of 45 firms and organizations honored recently with Certificates of Commendation for equal opportunity employment practices.

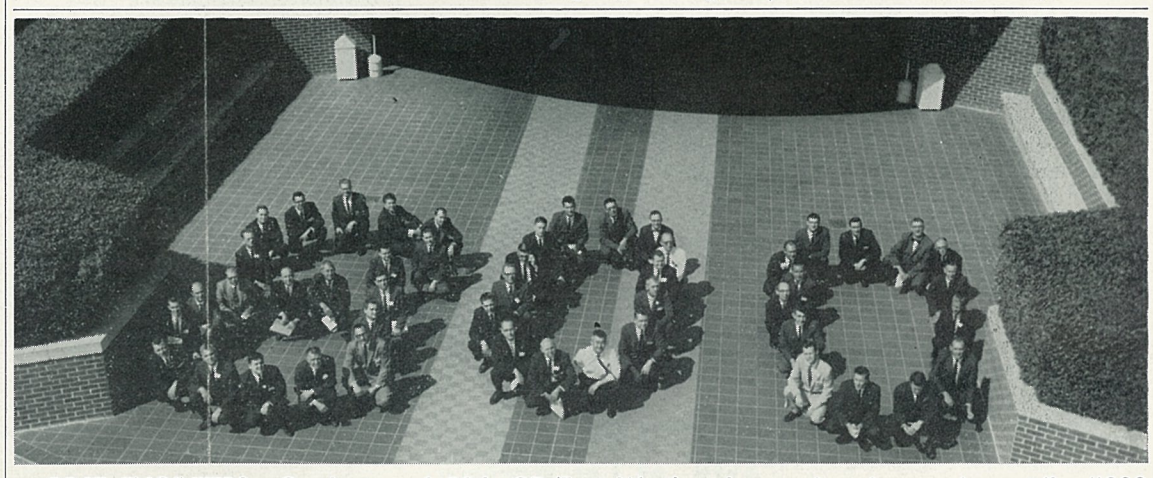
The award was made by the Chicago Committee of One Hundred, a civic agency dedicated to social and economic progress.

Presentation was made during ceremonies at the Committee's 22nd annual dinner in Chicago early this month.

In a citation accepted by J. L. Budros, corporate director of compensation and personnel development, General Dynamics was praised for "observing the fundamental rights of equality of opportunity in employment, without regard to color, creed, sex or national origin."



"Now, don't you worry! If things on the job don't go right, you've always got *me* to come home to . . ."



COST ENGINEERS—Graduates of 20th GD/Fort Worth value engineering seminar strike "800 pose" depicting number receiving VE sheepskins since program's inception.

Graduates of Value Engineering Seminars at GD/FW Exceed 800

Over 800 persons have graduated from GD/Fort Worth value engineering seminars.

The milestone was reached at Seminar No. 20, held at GD/Fort Worth March 18-29 and attended by a record-breaking 46 people. Potential savings were reported as "substantial."

"Most of the graduates have been GD/Fort Worth personnel, with a liberal sprinkling of Air Force and vendor individuals," said Rand Creasy, deputy value control coordinator.

Attending seminar No. 20 by invitation were Capts. C. M. Leggitt and R. P. Clevenger, Air Force Education With Industry officers on assignment at GD/Fort Worth; G. A. Wiley, W. A. Visage, and C. A. Schulz, Air Force Plant Representative's Office; C. W. Darby, Collins Radio; and Dr. G. G. Miller of TCU.

Also attending as special guests were G. V. Antonowicz, W. Jankowski and T. F. Flynn of Grumman Aircraft Engineering Corp.

Dr. Miller is the first college faculty member to attend a GD/Fort Worth seminar.

Eight projects—many of them selected because of their similarity to upcoming F-111 functions —were studied. Projects and team members were:

Leg Guide-Data Stg.—W. E. Rater, 160; C. R. Cripliver, 260; D. O. Burch, 31; E. G. Ward, 287-3; Capt. C. M. Leggitt, AF; and C. W. Darby, Collins Radio.

Flange and Tee—R. G. Jones, 160; H. D. Clark, 260; E. E. Creamer, 24-9; A. L. Hayter, 7-8; R. H. Allmond, 22.

Frame Assembly—M. Rowell, 61; L. C. Strange, 260; A. E. Unruh, 23-1; H. Ellis, 4-2; C. E. Spradley, 27; Dr. G. G. Miller, TCU.

Guard—C. W. Hill, 260; T. O. Finn, 062; C. C. Tittle, 24-1; W. H. Johnston, 16; Capt. R. P. Clevenger, AF; R. M. Crawford, 180-2.

Seal—E. C. Allison, 160; J. J. Harling, 260; C. A. Springer, 24-1; G. A. Babcock, 87-2; C. A. Schulz, AFPR; E. D. Weimer, 25.

Tube—W. E. Gray, 260; A. Noetzel, 160; J. A. Spitzenberger, 24-1; R. E. Fitch, 189; W. A. Visage, AFPR; V. V. Gilley, 24-8.

MTU Cover—C. B. Cox, 267-1; J. G. Damron, 165; W. D. Campbell, 24-1; D. R. Grimes, 4-2; E. J. Bielefeld, 28.

MTU Base—E. W. Foster, 065; L. MacMurdo, 160; J. E. Massie, 24-1; L. N. Slayton, 12; L. T. Clark, 29; G. A. Wiley, AFPR.



ALL WINNERS—Some of 66 General Dynamics youngsters selected to display projects in recent Greater San Diego Science Fair gather outside Balboa Park Conference Hall during judging. Twenty-eight of group were singled out for special merit during course of event.

Dynamics Sons and Daughters Again Dominate Science Fair

General Dynamics sons and daughters were a dominant group again this year in the Greater San Diego Science Fair held last week in Balboa Park.

Sixty-six General Dynamics youngsters displayed their work at the Fair, with eight listed as sons or daughters of GD/Convair employees; two from GD/Electronics; 17 from General Atomic; and 39 from GD/Astro.

The Fair culminated months of scientific activity for the young entrants, all of whom were previously named winners in local school fairs.

Each had independently (or in some cases, as a member of a group) developed a scientific project, recorded data and results, and prepared a display to demonstrate their work. Scientists and educators from area colleges and industries volunteered their time to judge displays and counsel exhibitors.

J. R. Dempsey, GD/Astro president, served as chairman of the Fair's board of governors, with J. A. Croft, chief of educational services, and Emory Thurston, serving on the Fair advisory committee.

General Dynamics scientists and engineers serving as judges included Dr. A. E. Adelson, Peter Baima, J. F. Brady, J. C. Breeze, O. W. Clausen, D. P. Germeraad, Dr. G. J. Goble, Dr. A. E. S. Green, Lester Harr, J. F. Haskins, D. P. Hoffman, Samuel Kaye and J. M. Maughmer of GD/Astro.

Others were Dr. R. F. Rolsten, W. J. Schart, E. W. Schwartz, Joan Sherley, R. S. Shorey, T. T. Tanalski, Dr. Alex Thompson, E. H. Wrench, and Dr. W. L. S. Wu of GD/Astro; and Don Pugh of GD/Electronics.

From General Atomic came Dr. Helmut Ehrhardt, M. A. Fineman, W. V. Godel, A. W. McReynolds, P. H. Miller, Dr. H. R. Snodgrass and Dr. R. F. Stebbings.

To Charles Getzoff, son of a retired GD/Astro employee, went a special ISA award, a Navy Cruise award, and a merit award (I) in electronics. General Atomic sons Stephen Borders and Gary Allen received a Scientific Equipment award and an Air Force award, respectively, while GD/Convair son Donald Atha received the Scientific American award.

For judging purposes, exhibitors were divided into junior (grades 7, 8, 9) and senior (grades 10, 11, 12) groups with top exhibits singled out for special merit awards. Twenty-eight General Dynamics exhibitors were honored with I, II or III ratings.

Listed with ratings and subjects were GD/Convair students Paulette Lockwood, (III) botany; Edward C. Hendricks, (1) math; Donald Atha, (I) medical science; and Julia Buchanan, (III) botany (group).

From General Atomic were Gary Allen, (I), and Sharon Wilkins, (II) medical sciences; Stephen Borders, (I), and Robert Snodgrass, (II) botany; Hugh B. Stewart, (I) chemistry; and William Kratz, (III) physics.

GD/Astro youngsters honored with merit awards included Theodor Tanalski, (I) electronics; Nancy Albers, (I), and Judith Ebners, (III) microbiology (group); David Bard, (I) botany (group); William Duerksen, (II) medical science; Doug Johnson, (II) zoology; John Harmon, (II) astronomy; Jeffrey Greensite and Bob Fosse, (II) and Robert Brazell, (III) math.

Also, Bob Jaegly, John Valentino and Diane Sylvester, (II), and Thomas Utschig, Sandra Yoshihara and Connie Taylor, (III) physics; Nancy Fisher, (II) chemistry; and Jon Mark Winlund (III) engineering.

De Luxe Buses To Take Skiers On Snow Jaunt

CRA skiers and friends will be heading to the High Sierras the weekend of May 3-5 for their annual spring trip.

Joe Harris, CRA commissioner, said that all General Dynamics skiers, or for that matter, all non-skiers, are welcome to join the trip to Mammoth Mountain.

Annual races will be held Saturday with an event for CRA members only, open race, and club championship race for perpetual trophy.

Standard package price is $41.75 for transportation, two nights in Mammoth Mt. Hotel dormitory lodgings, two breakfasts, one dinner, two days' chair lift. Price for non-skiers is $33. Ski lessons are free for CRA members.

Two de luxe buses will leave the Convair executive parking lot by Bldg. 19 at 5:15 p.m. Friday night, May 3, and make a second stop to pick up Astro travelers at 5:45 p.m. in the Astro parking lot north of Bldg. 1, Kearny Mesa site. They will return to San Diego around midnight Sunday, May 5.

Buses will be equipped with card tables, bar, rest rooms. Free coffee, soft drinks, and ice. Box lunches, catered by Prophet Co., will be 85c for two sandwiches, or $1.25 for chicken luncheon.

Reservations, with $15 deposit, must be made before April 24. Balance will be collected on boarding the buses. No cancellations will be accepted after April 24.

Don't forget sun glasses, sun lotion, bathing suits for a swim in Hot Creek, reminds Harris. Ski equipment may be rented at the lodge.

GD/Convair and GD/Electronics people may call Harris at his home phone, 284-0278 for reservations. Hal Moore, 277-4631, ARA club president, is Astro contact.

McClure to Address ASQC at Cal Western

J. Y. McClure, General Dynamics director of reliability and quality control, and P. I. Harr, GD/Astronautics director of reliability, will be featured speakers at the third annual seminar of San Diego Section, American Society of Quality Control at Cal Western University April 20.

Seminar subjects will deal with "Space Age Quality — Brought Down to Earth," said M. R. Seldon of GD/Astro, co-chairman with W. J. Wilkinson, San Diego Contract Management District, AF Systems Command.

Other speakers at the day-long event will be H. C. Todt of North American Aviation; Dr. L. W. Ball, Boeing Co.; and Rear Adm. R. M. Reynolds, USN, force material officer, COMAIRPAC.

Tickets, which include luncheon, may be obtained from ASQC boosters or H. H. Mischler, GD/Astro Plant 19 (formerly Plant 2), ext. 2715.

Salvage Schedule Set For Divisions

Schedule for the next four weeks at GD/Convair and GD/Astro salvage yards for employee sales is:

GD/Astro—April 20, May 4.

GD/Convair—April 27, May 11.

Rally to Cover Scenic Route

April 21 is the day for the 1963 edition of ARA Sports Car Club's annual championship rally.

The event is open to everyone except members of the sponsoring Astro group, who administer the run.

First cars will roll at 6 a.m. from in front of the Bldg. 2 reception center at the Astro site. The rally will last about 8½ hours, and will cover approximately 300 miles.

The route is described as including "some of the most beautiful scenery in the state."

Rest and lunch stops are scheduled.

As prescribed by championship regulations, each car must be occupied by two persons—driver and navigator.

Entry blanks and additional information are available from J. A. McRae, GD/Astro ext. 4251.

Two Thirds of Utility Cost Target Achieved

Thanks to cost-conscious employees and the special efforts of departments and groups, a utilities economy program at General Dynamics/Astronautics has attained 69 per cent of its goal in just seven months.

The 12-month goal is to cut at least $200,000 off Astro's annual utilities bill.

In seven months savings of $138,698 have been realized.

"The attention employees have given to this effort, especially during winter months, has been highly commendable," said W. J. Stanley, manager of plant engineering. "If this trend continues, we can realize and possibly exceed our set goal."

Individual help centers on turning off lights, power equipment, etc., when not in use, in seeing that all lights, etc., are shut off at the close of shifts and in keeping doors and windows closed when the heat is on.

Departmental participation includes this individual effort, plus special attention to operating routines affecting utilities. For instance, the substitution of less-expensive chemicals and soaps, plus improved procedures have accounted for a reduction of at least $75,000 in processing areas alone.

Individuals with suggestions to aid the program may contact Joe Dragonetti at ext. 3486.

Toastmasters Club Elects Astro Men

Four GD/Astro employees have been installed on the executive committee of Mt. Helix Toastmasters Club 126.

They are: Seymour Zeenkov, AWS program office, a past president, Glenn Vail, Dept. 642-2, new educational vice president, Dave Rhoads, Dept. 526, administrative vice president, and Warren Marsh, Dept. 195, secretary.

Installing officer was Ernie Kotnik, GD/Convair Dept. 6, and a past president.

More than half the club members are GD/Astro employees. Information about the group is available from Rhoads, ext. 1193.

Instrument Society Votes Dynamics Men

W. R. Holmes of GD/Convair standards laboratory will be installed as president of the San Diego Chapter of the Instrument Society of America at the group's May meeting.

He has held chapter posts of vice president and member at large, and currently serves as national chairman of the organization and management committee of ISA's measurement and instrument division.

Other General Dynamics men chosen at the March meeting are Martin Kantor of General Atomic, vice president; three from GD/Astronautics — Charles Hill, recording secretary; Leon Schenke, treasurer; and Harry Norton, member at large.

Application Blanks For Loans Available

Application blanks for loans at the new City Bank of San Diego, opened recently near General Dynamics/Astronautics main plant, are available through employee services office, Bldg. 8, Plant 71.

The new bank is located in the Fed-Mart building and is open from 10 a.m. until 8 p.m. on Monday and Friday, and from 10 a.m. until 5 p.m. on Tuesday, Wednesday and Thursday.

Silver Service Prizes Put Up For Trap Shoot

Top guns from all points in Southern California will be shooting for silver service prizes at this month's ATA registered trapshoot sponsored by CRA-ARA Gun Club Sunday, April 28.

Such coveted awards as silver serving plates, chafing dishes, sugar and creamer sets will go to winners in Classes A, B, C, D of the 16-yard, 100-target division; first and second places, high lady and high junior in the handicap 100-target event; and winner of the 50 pair of doubles.

Registration will start at 8:30 a.m. at Gillespie Field Range, said CRA Commissioner Jack Swank, with competition getting under way at 10 o'clock.

Trapshooters will be able to get in a little extra practice for the monthly registered meets when the range is opened on Saturday afternoons from 1 to 5 p.m. First Saturday for open shooting will be May 4, after Daylight Saving Time goes into effect.

Two Convair men, Ed Barrett and George Clayton, scored 50 straight in the regular club trapshoot April 7. Both won a gun case for their skill.

Top rifle shot was Dave Farrelly of Astro who braved the wind to score 347 out of a possible 400 for the gold medal, said Bob Andrews, ARA Rifle Club commissioner. Gusts were so strong during shooting that often the shells wouldn't even hit the paper target, let alone the bull's-eye. Silver medal winner was Bill Prentiss, also of Astro, with a 344.

Luck picked eight other trap and skeet winners at the April 9 drawing: Warner Gatterman of Astro, game tote; W. Kantman, Astro, cufflinks; Lois Cullmer, flashlight; A. Kest, shooting gloves; Robert Beckett, hunting jacket; C. F. Thomsen and L. Nash, Convair caps; Arthur Salatin, shell holder.

GD/Astro Son Wins Speaking Laurels

Another GD/Astro son, Patrick Mahoney, 16-year-old son of Stan Mahoney (Dept. 140-3) won a first place in his school competition in the recent Lions Club Student Speakers contest, and placed second in the El Cajon zone meet.

Marshall Hurlich, son of A. Hurlich, Dept. 592-1, finished second in the San Diego zone speak-off (**GD NEWS, April 3**).

Patrick, a sophomore at Granite Hills High School, El Cajon, represented the Bostonia Lions Club.

Astro Team Leads Volleyball League

Astro's Dynamics volleyball team led the American League, 2-0, after two weeks of IRC tourney play.

In first tourney matches March 27, Dynamics downed Untouchables, only other competing Astro team, by 15-11, 15-11, and went on the following Wednesday night to defeat California State Employees Association, 15-7, 15-7. Untouchables beat City Engineers the first week, 15-4, 15-12.

Ryan was on top of the National League, with GD/Electronics and Convair Hi-Lows trailing, 1-1. GD/Electronics dropped its first match in a hard-fought battle with Ryan, 15-4, 15-6, 11-15. Hi-Lows won on a forfeit by Park and Recreation Dept. Wreckers.

In second week play, April 4, GD/E defeated the Wreckers and Miramar took the Hi-Lows.

American League matches are played each Wednesday and National League, each Thursday, in Balboa Park's Muni Gym.

SNOW SKI CLUB MEETS WEDNESDAY

A meeting of CRA Snow Ski Club will be held next Wednesday (April 24) at Torrey Pines Inn at 8 p.m. Final arrangements will be made for the group's annual trip to Mammoth Mt.



SHUTTER STOPPER — Astro's Virginia Mateja, Dept. 523-6, was one of three finalists in recent ARA queen contest to model for recent meeting of ARA-CRA Camera Club. Astro Lens' Gerhart Gross captured this pose.

Astro Queens Pose For Club Lensmen

Three photogenic models and 40 enthusiastic cameramen crowded Balboa Park's Photo Arts Bldg. April 7 at a meeting of the joint ARA-CRA camera club.

Models were finalists in the recent ARA queen contest. Virginia Mateja, Eleanor Boiselle and Bonnie Simmons were photographed using club lighting and backdrop equipment.

At the group's next meeting, 7:30 p.m., April 21, a lecture, discussions and slide show on "What Makes a Good Picture" are planned, according to ARA Commissioner Ken Rinker.



BLOOMING BEAUTIES—Janet Flinn (Astro Dept. 324-7) adds her beauty to bursting glow of roses nurtured by ARA Garden Club Commissioner Everett Henderson for coming joint ARA-CRA Annual Rose Show this Sunday (April 21) at Floral Association Blvd., Balboa Park.

F-102 'Boom' Aids in Rescue

A sonic boom from an F-102 helped rescue an Alaskan bush pilot, downed and out of gas in a raging snow storm.

Lt. Col. Joe W. Rogers, commander of the 317th FIS, Elmendorf AFB, piloted an F-102 to fix the position of Don Sheldon, the grounded pilot, by breaking the sound barrier in passes over the area. Sheldon timed the period it took him to hear the sonic boom noise and passed the information on to searching planes via radio contact to automatically fix his exact location.

Twenty gallons of fuel was air-dropped and Sheldon was able to get his plane off the ground on a 3,000-ft. strip he had tramped out with snowshoes during the five days he was earth-bound.

Editor Honored At Convention

J. D. Meacham, GD/Convair publications editor, received two "first" honors at the March 27-30 convention of the National Society for Programmed Instruction in San Antonio, Texas.

As president of the San Diego Chapter, he accepted the trophy naming the local group as "Chapter of the Year" for outstanding promotion of programmed instruction. His second award was for his personal efforts in founding the San Diego organization.

Both Meacham and C. M. Keys, GD/Convair technical publications specialist and SD Chapter vice president, gave talks before the 750 delegates representing 12 chapters at the first annual convention. Meacham's subject was "Aerospace Industrial Programming—Past, Present, Future," and Keys spoke on "Industrial Programmed Instruction in Value Control Training."

Liquid Vitamins Offered at Bargain

A limited supply of liquid vitamin, especially suitable for infants and children, is still available to GD/Convair and GD/Electronics people.

Hightower Vitamin Drops sell for $2.25 a bottle, nearly half of retail cost of most popular brands. Each bottle contains 60 cc, or a 100-day supply.

It may be purchased at GD/Convair employee services, Bldg. 32, Plant 1, at plant cafeterias, or from vending machines throughout the facilities, as well as at industrial relations offices of GD/Electronics.

Callison Assigned To Post in Alaska

Shifts in assignments of GD/Convair field service representatives in support of military craft saw C. I. Callison joining L. A. Worley at Elmendorf AFB, Alaska, last month.

Callison goes to Alaska from South Dakota where he had been stationed with the 114th Fighter Group at Sioux Falls. He replaces W. E. Sweat, now transferred to NASA Manned Spacecraft Center, Houston, Texas. D. N. Miller, former rep at Houston, has returned to GD/Convair plant at San Diego.

Supplies Requests Go to Zone 44-32

Requests for office supplies now are to be sent to Material Release at zone 44-32, following the move of material control functions from Rose Canyon to Plant 1 at GD/Convair.

All material stores requisitions (3084-1) and requests for stationery supplies (3409) for factory, operating, or office supplies listed in the Material Department Commercial Catalog must be reviewed and verified by Material Release before orders are referred to Rose Canyon Stores for transmittal of supplies.



HONORED—J. D. Meacham of GD/Convair receives "Chapter of Year" trophy from Col. G. D. Ofiesh, USAF, president of National Society for Programmed Instruction.

Javelin Thrower

GD/E Daughter Top Prospect To Make U.S. Olympic Team

A lithe young woman, RaNae Bair, with a strong throwing arm will have General Dynamics friends rooting for her, when and if, she is chosen to represent the United States in 1964 Olympics women's javelin competition.

"She's persistent," says her father, Glen Bair, GD/Electronics leadman in electronic assembly. "We're sure she'll make it."

RaNae, 20, has made it from the time she placed second in 1962 Women's Outdoor Nationals with a throw of 152 ft., 7 in., after only two weeks' practice. She went on to place third in the U.S. vs. Russia meet at Palo Alto.

This week she is on her way to Sao Paulo, Brazil, as a member of the United States team competing in the Pan American Games April 20-May 5. Later this summer she will enter the Outdoor Nationals at Dayton, Ohio, to qualify for the Pan American team's European tour and will compete in Olympics qualifying matches next year.

Active in sports all her life, the tall (5 ft., 11 in.) girl has been setting track and field records through junior and senior high school. She proved she was a natural for the javelin with her baseball throw of 269 ft., and 240-ft. softball throw record.

"My biggest dream is to go to the Olympics at Tokyo next year," RaNae said, "so I switched to the javelin because there are no baseball or softball throw events. The qualifying mark is 164 feet and I think I can do it!"



HIGH AIM—RaNae Bair, GD/E daughter, is in Brazil this week, representing U. S. in Pan American games. She hopes to make Olympic team.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BOWLING—Annual CRA plant championships, April 20-21, 27-28, Pacific Recreation.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master Points night April 24.

CAMERA CLUB — Joint CRA-ARA meeting April 21, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB — Anniversary meeting April 18, Convair executive dining room, 7:30 p.m.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Joint CRA-ARA annual Rose Show April 21, Floral Association Bldg., Balboa Park. Open to public, 1-6 p.m.

GLIDER CLUB—Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF — IRC tournament May 4-5, 11-12.

GUN CLUB — Registered ATA trapshoot April 28, Gillespie Field Range. Registration at 8:30 a.m.; shooting at 10 a.m. Monthly club shoot May 5. Open trapshooting Saturday afternoons, starting May 4, 1-5 p.m.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children under 12, 20c.

PISTOL CLUB — Match April 28, 8:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (April 18), 8 p.m., Harbor Drive club headquarters.

RIDING CLUB — Meeting May 2, 7:30 p.m., Gillespie Field Clubhouse.

ROAD RUNNERS — Meeting April 18, 7:30 p.m., Gillespie Field Clubhouse. Weekend outing April 26-28 to Ramona.

SNOW SKI CLUB — Meeting April 24, 8 p.m., Torrey Pines Inn. Annual spring weekend trip to Mammoth Mt., May 3-5.

SPORTS CAR CLUB — Astro Championship Rally April 21. Meeting May 1, Convair cafeteria, Pacific Hwy., 7:30 p.m.

STAMP CLUB — Meeting May 2, Convair executive dining room, 7:30 p.m.

VOLLEYBALL — IRC tourney matches Wednesday and Thursday evenings, Muni Gym, Balboa Park.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Bowlers Enter Annual Tourney

Nearly 200 bowlers from GD/Convair and GD/Electronics will take part in the 22nd annual CRA plant championship bowling tournament during the next two weekends, said Jim Hayman and Mike Brooks, commissioners.

Thirty-six mixed teams will roll this coming weekend (April 20-21) between 1 and 7 p.m. at Pacific Recreation. Doubles and singles events are scheduled the following weekend (April 27-28) from 12:30 to 6:45 p.m. each day.

Now signed are 80 doubles and 160 singles entries with about 50 women competing for women's all-events honors.

In last year's championship play, Richard Rickman won men's handicap all-events with 1,883. Hayman was scratch winner with 1,778. Clarice Aus topped women's all-events with high handicap and scratch scores, 1,849 and 1,537. Judy Raffelson was second high handicap with 1,804.

Bridge Fans to Play For Master Points

Bridge fans at GD/Convair and GD/Electronics are reminded that next Wednesday (April 24) will be Master Points night in CRA play in the Convair executive dining room, Pacific Hwy.

Frank Westphal, club president, urges all General Dynamics bridge players to join in the monthly event. Fees are 50 cents per player and coffee is served free.

Regular weekly play, open to visitors on all nights except Master Points sessions, is scheduled each Wednesday at 7:30 p.m. at 25 cents each.

Road Runners Plan Outing

Final arrangements for Road Runners' next weekend outing will be made at tomorrow (April 18) night's meeting at Gillespie Field Clubhouse, 7:30 p.m.

Harry Rush, as wagonmaster assisted by Chuck Risner, will lead the CRA trailerites to Red Rooster Ranch near Ramona for the April 26-28 campout.

Also, on tomorrow's business agenda will be discussion of coming election plans and a schedule for future outings.

GD/Convair and GD/Electronics trailer fans, 45 people in 18 vehicles, joined the 10 clubs and 127 trailer units at the recent Border District TTCA Rally in Blair Valley.

Guided tours of the desert area and white elephant sale and auction, with receipts earmarked for state travel trailer legislation, preceded the Saturday potluck. During the evening the group heard a talk by an Anza-Borrego park ranger, saw travel slides provided by Mr. and Mrs. Frank Galleck, participated in a raffle of trailer equipment, and joined in singing around the campfire. Palm Sunday church services were conducted by the San Diego Trailer Club before camp was broken for the homeward trek.

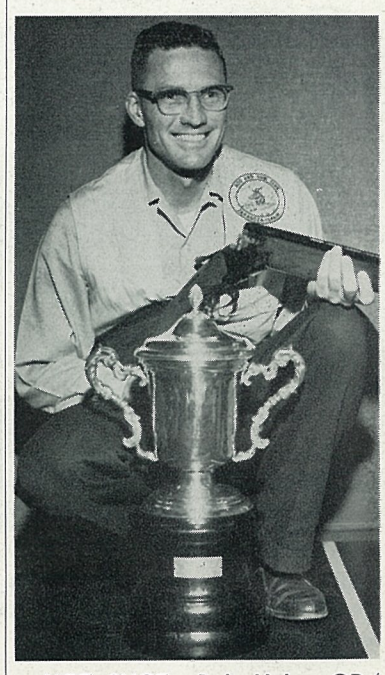
FIELD SERVICE REP A WINNER

A GD/Convair field service representative proved his marksmanship in a real, live bird shoot at the Spanish air base where he is stationed in support of Convair F-102s.

R. J. Helm, assigned to the 431st Fighter-Interceptor Squadron, Zaragoza Air Base, Spain, won top trophy in the live-pigeon shooting contest at the Zaragoza Gun Club recently.

The contest required shooters to kill live birds before they escaped over a fence at a distance from the shooting platform. Tail feathers were pulled from some of the birds to make their flight more erratic.

Helm was one of three out of 42 entrants to shoot all of the assigned birds.



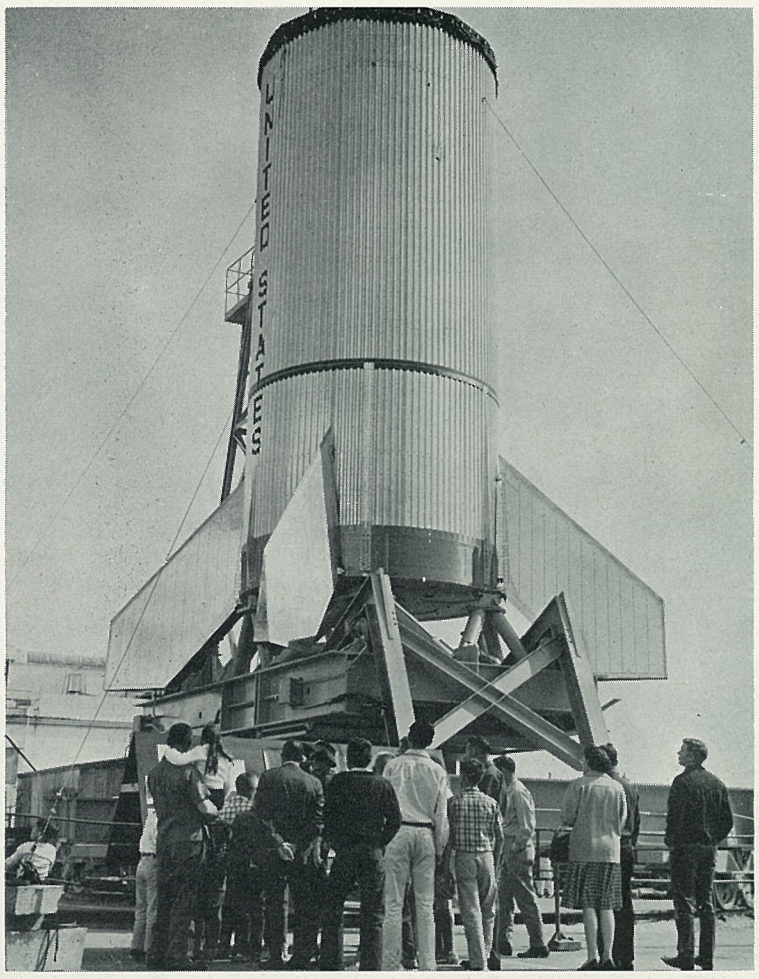
HOT SHOT—Bob Helm, GD/Convair rep, with huge trophy he won in live-pigeon shoot at Zaragoza Air Base, Spain.

Coin Club Will Hold Birthday Program

Tenth anniversary of the CRA Coin Club will be celebrated tomorrow night (April 18) at the monthly meeting in Convair executive dining room, Pacific Hwy., 7:30 p.m.

All former and present members are invited to join in the observance, urged John Barrett of GD/E, club president. Program features will include colored slides showing "Famous Women on Coins and Medals," and a coin auction.

The CRA group, organized in April, 1953, with Jack Benedict as first commissioner, is the second oldest of the 11 coin clubs in San Diego County.



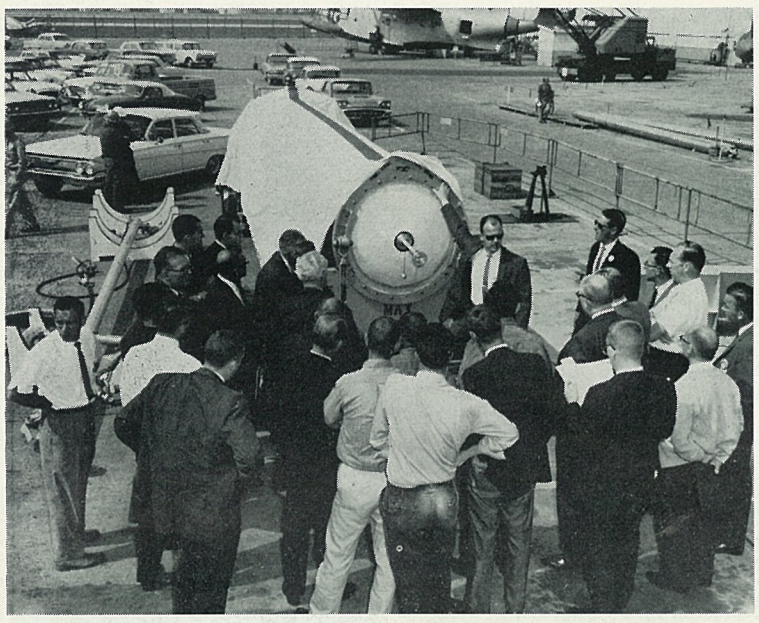
FIRST LOOK—Over 700 GD/Convair men, women, and children turned out for a look at the first Little Joe II launch vehicle, assembled on its launcher in Plant 1 experimental yard, at a special open house for families late last month.

Score Briefed on Rocket Motor That Will Propel Little Joe II

A three-day familiarization and orientation on the Little Joe II propulsion unit was conducted by Aerojet-General Corp. training specialists at GD/Convair March 25-27.

Twenty-one GD/Convair and NASA men were briefed on the Algol-ID-Mod 2 solid propellant rocket motor and ground support equipment for the motor which will propel Little Joe II launch vehicles. Those taking the course represented engineering, experimental, inspection, and safety functions.

C. B. Bonham and F. J. Hunger, senior instructors in customer training from Aerojet-General's Technical Services Division of the Solid Rocket Plant at Sacramento, Calif., instructed. The training course was coordinated by H. W. Rubottom of GD/Convair educational services.



BRIEFING—F. J. Hunger and C. B. Bonham of Aerojet-General Corp. explain handling procedures of Little Joe II rocket motor to group of GD/Convair and NASA people during recent training course at San Diego plant.

GD/FW's J. C. Starnes Elected Chairman Of Aerospace Industries Committee

J. C. Starnes, GD/Fort Worth supervisor in applied manufacturing research and process development, was elected chairman of the manufacturing equipment committee of the Aerospace Industries Association at a recent meeting in San Francisco.

The committee is composed of executive manufacturing management men from companies which primarily make aerospace products in the U.S. B. G. Reed, GD/FW vice president-operations, is the company's representative on the AIA manufacturing committee.

Starnes' duties will include directing activities in three basic areas: determining advanced techniques and processes for the industry; initiating projects that meet basic requirements of increasing manufacturing efficiency and reducing product cost; and enhancing industry position in the area of numerically controlled equipment.

Astro's Deane Davis Represents Industry

Deane Davis, chief design engineer—Centaur, General Dynamics/Astronautics, represented the aerospace industry during the University of Colorado's World Affairs Conference last week.

It was Davis' fourth consecutive appearance in the week-long event which drew 80 invited guests representing every business and professional group and including four ambassadors of foreign nations.

Panels debated and discussed current topics before student groups.

California to 'Lose' One Hour April 28

Days will be longer—or seem that way — for Californians when Daylight Saving Time goes into effect again the last of this month.

General Dynamics people in California will turn clocks ahead one hour the last Sunday of the month (April 28).

The time change affects divisions in San Diego, Pomona, and off-site facilities.

Nights in Open

Two at GD/FW Survive 3-Day 'Crash' Drill

"Don't throw anything away—everything can be used for something."

The advice came from GD/Fort Worth flight department's W. E. Denton and Grover Tate following a recent three-day survival exercise in rugged back hill country near Gordon, Texas.

True to their own counsel, the durable pair used virtually everything in their survival kit, plus many items of nature—including toothbrushes made from willow twigs.

The B-58 navigator and DSO were blindfolded and released at night some distance apart.

There followed three days and nights of foraging for food and water—and protecting themselves from the elements (temperatures at night dipped to near-freezing).

"Paratents" were made from parachutes, with life rafts for mattresses.

"Later, we had to spread the parachutes to aid the rescue crew in 'finding' us," Tate said.

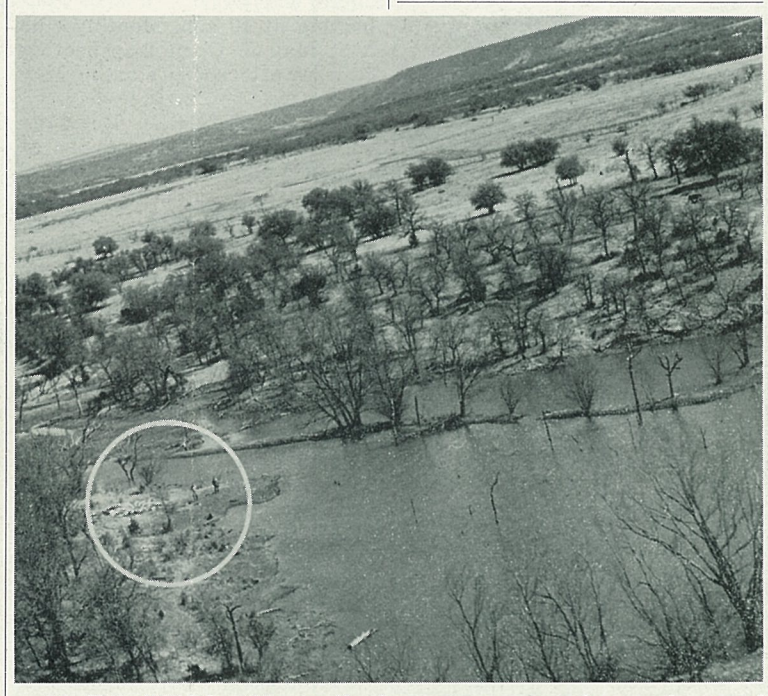
Besides survival-kit rations, the men used a gill net to catch perch and catfish, which they roasted on a spit. Both got their first taste of armadillo. It was "a bit dry and stringy . . . but edible."

Forewarned of the possibility of mountain lions, both were relieved the first night when a "loud crackling in nearby brush" turned out to be cows.

The B-58 crewmen emerged in good shape physically, with the following additional recommendations to airmen who bail out over similar terrain:

Know your equipment thoroughly; dress for the most extreme weather that you would likely encounter along your flight path; carry a candy bar or two in your pockets; eat well before your flight; make a shelter as soon as possible.

Also, check each piece of equipment before you try to use it; make a blanket with some type of insulation (leaves, grass, paper) or your parachute; keep size of fire small in dry country; catch only as many fish as you need—or cook and smoke them for later use; rest is as important as food—provide for it as you would food; find water first and food later.



IN THE WILDS—"Rescue" plane spots spread parachutes of GD/FW's W. E. Denton and Grover Tate, practicing survival in Texas back country.





BRAZIL BOUND—First Varig 990A wings off from GD/Convair flight line on schedule early April 3 on delivery flight to Porto Alegre, Brazil. Below, W. D. Carrier, GD/Convair pilot, and Capt. O. Silveira of Varig point out route from California to South America. Others of flight crew are C. J. Falkenthal, GD/Convair flight engineer; Varig's M. Kern, flight engineer; Capt. B. Scalabrin; F. Petersen, flight engineer.

First of Varig's 990As Delivered to Brazil

First of three 990A jetliners to move out of General Dynamics/Convair this month for Varig Airlines of Brazil arrived at the South American city of Porto Alegre April 4 after an overnight delivery flight.

The advanced version Convair jet transport, piloted by W. D. Carrier of GD/Convair and Capt. O. Silveira of Varig, took off a few minutes before its appointed departure time of 7 a.m. April 3.

First leg of the flight took plane and passengers from San Diego to Panama City where they spent the night. Next day took them to Lima, Peru, and across the Andes to Porto Alegre, Varig's jet transport base of operations.

Other flight crew members on first delivery were C. J. Falkenthal, GD/Convair flight engineer; Capt. B. Scalabrin; M. Kern, and F. Petersen, flight engineers, all of Varig.

Second Varig 990A was due to go out of San Diego late last week and a third Convair jetliner is scheduled for delivery before the end of the month.

Flight crew on the second craft were A. P. Wilson, GD/Convair pilot; Ludy Knudsen, GD/Convair flight engineer; Varig Capts. Renato Contins and Murilo Alvares; Gilberto Salger, flight engineer; Victor Martinewski, navigator; Ivo Silveira, radio operator.

P. H. Selby, GD/Convair flight training supervisor, accompanied the flight for consultations on training at Porto Alegre and Rio de Janeiro, and Viasa's headquarters at Caracas, Venezuela.

George Pohlman and Ed Griffin of customer service are assigned to Varig as field service representatives to direct maintenance training. Tex Ashmore, field service representative, will fly 990As during the first two months in actual passenger service to oversee maintenance operations at the various stops.

The first 990A will probably go into service about the first of June from Rio de Janeiro to Los Angeles, said C. B. Edmonds, Varig's International Division maintenance manager, at GD/Convair during delivery of the airline's Convair jet craft.

GD/Convair and Varig Men Hold Reunion

Two small town "boys" had an unexpected reunion at GD/Convair over 20 years and thousands of miles distant from their home town at Lincoln, Mo.

GD/Convair's H. W. Balke and Varig Airlines' C. B. Edmonds came face to face for the first time in 23 years when Balke walked into Edmonds' office to present release papers for Varig's first 990A. With one look and one voice they echoed, "Haven't I seen you some place . . . ?"

Balke, responsible for commercial transport inspection and customer coordination at GD/Convair, and Edmonds, maintenance manager of Varig's International Division headquartered at New York City, both grew up and attended school in the small Missouri town.

TWA's 880s Pass 100,000 Air Hours

Trans World Airlines is the first airline to pile up over 100,000 hours of flight time with Convair-built jet transports.

As of the first of March the 20 Convair 880s flying under TWA colors had spent 100,730 hours in the air since the first TWA 880 was put into operation two years ago. Each TWA 880 now averages 6.9 hours in service every day.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

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NEW PREXY—Ralph Montgomery (right), receives congrats from outgoing Management Club president, E. R. Fink, on announcement of new officers.

Ralph Montgomery New President of Mgt. Club

Ralph M. Montgomery was elected president of the Management Club at GD/Convair and GD/Electronics in one of the largest votes in years.

Over 75 per cent of the club's membership turned in ballots electing the new slate of officers for the 1963-64 term, said J. L. Terrien, nominating committee chairman.

Montgomery, who succeeds outgoing president E. R. Fink as head of the Management Club, has been serving as first vice president since the resignation of Paul Hamm, who left the company early this year. He had been elected second vice president for the current club year, and has also held treasurer and recording secretary posts.

Assistant foreman in transportation (Dept. 41-1), Montgomery has been with GD/Convair since 1941. In 1950 he was made assistant foreman in production control, later advanced to manufacturing control foreman and in 1958 was promoted to general foreman in transportation operations.

Serving with him will be: D. L. Macey (Dept. 42-6), first vice president; Joe Freeman (Dept. 42-6), second vice president; J. W. Woodhouse (Dept. 23-1), recording secretary; M. L. Sweeney (Dept. 42-5), financial secretary; L. F. Tubbs Jr. (Dept. 42-6), treasurer for the coming term.

Three-year board of control member, K. W. Wulfemeyer (Dept. 3-2).

Two-year board of control members, R. T. McMurry (Dept. 25-0) and E. H. Wesp (Dept. 401-1).

One-year board of control members, T. C. Berardini (Dept. 123-0), B. A. Clemmens (Dept. 131-0), R. J. Haney (Dept. 23-3), C. F. Uhl (Dept. 171-0).

Nominating committee submitting candidates was Terrien, L. R. House, V. A. Petricola, L. F. Boring, George Couchman, and M. C. Val Dez. Installation will take place this month.



GIFT — R. H. Biron, left, General Dynamics vice president, presents Corporate gift of $65,000 to Paul Wolcott Jr., 1962 campaign vice chairman of United Community Services Fund. Check was pledge in behalf of all Dynamics operations in San Diego area.

Another C-141 Tail Shipped To Lockheed

Second C-141 tail section built at General Dynamics/Convair for the Air Force turbofan jet cargo carrier arrived at Lockheed-Georgia Co.'s Atlanta plant April 18 for mating to the fuselage of the first flight article.

Shipment of the vertical and horizontal stabilizers in their specially-built Hydra Cushion car was moved up a week to adjust to Lockheed's schedule. All related components, such as rudder, leading edges, left San Diego a week later.

"The shipment arrived in excellent condition," said J. M. Adamson, GD/Convair C-141 program manager, at Atlanta for delivery. "The shock-indicating devices showed that parts had a 'smooth-as-glass' ride. Loads recorded en route were within a plus or minus quarter of a G."

The next two empennages, second and third flight articles, will go out of the San Diego plant during July. One now is at GD/Convair's structures laboratory facility at the seaplane ramp undergoing stiffness tests.

'Dynamic America' Available at $5

A few additional copies of "Dynamic America," pictorial history of General Dynamics Corporation, have been obtained by GD/Convair employee services.

The limited supply will be sold at cut-rate price of $5 per volume. This is a reduction of $2.50 from original price to General Dynamics employees.

Copies may be purchased at employee services counter, Bldg. 32, Plant 1.

Mattie Ross Is First Woman To Capture President Award

A General Dynamics/Convair woman has received the division's President's Award for the first time in the eight years it has honored leaders in cost reduction.

Mattie C. Ross, assistant supervisor in charge of telephone and teletype operations, was tabbed 1962 President's Award winner at the April 17 Management Club meeting. President J. H. Famme presented the traditional plaque, framed certificate, and a $250 gift certificate for a new sewing machine.

Mrs. Ross, who also was in the running for the 1961 award, had $52,767 savings to her credit through Cost Improvement Proposals approved during last year. Altogether her recommendations and suggestions in more efficient use of telephone facilities have saved the company the sizable amount of $133,917, Famme pointed out in praising her for her "impressive record of savings."

"This winner outstripped the competition in originality, ingenuity, completeness of her CIPs and participation in the cost reduction program," he said.

Mrs. Ross' recommendation that the company install Wide Area Telephone Service saved $14,848 during 1962 and another installed proposal resulted in almost $38,000 savings through more economical telephone usage.

Savings are still being tallied on two other ideas submitted last year.

Mrs. Ross joined GD/Convair in 1944 as a switchboard operator and was made chief clerk in office service in 1950. Two years later she was promoted to assistant supervisor.

Famme lauded all four 1962 candidates for "practicing cost reduction, not preaching it!" Each received a special certificate.

Contract Continues Terrier and Tartar

The U. S. Navy awarded a $5 million contract to General Dynamics/Pomona on April 16 for continued production of Terrier and Tartar guided missiles.

Both Terrier and Tartar are supersonic surface-to-air missiles which are operational for Navy anti-aircraft protection.



TOP SAVERS — Mattie C. Ross (Dept. 26), first GD/Convair woman to win President's Award, lines up with other candidates, Nick Kosmas (Dept. 34), C. D. Dismuke (Dept. 27), and W. R. Holmes (Dept. 48), to receive congratulations from President J. H. Famme.



"MAN OF YEAR"— President J. H. Famme and Mrs. Famme admire "Mug," token from Management Club as Famme was tabbed "Mug of Year," for "doing more than anyone else to instill new vitality in GD/Convair," according to D. C. Wilkens Jr., director of industrial relations, who made presentation.

GD/Convair Aimed At New Products

Fighting hard for a successful come-back, General Dynamics/Convair is laying a firm foundation of research and development and engineering know-how aimed at developing—and selling—new and imaginative products.

J. H. Famme, GD/Convair president, brought this message to a full house of Management Club members and wives April 17 at El Cortez Hotel. Though delivered to club members, his report on the state of business was intended, also, for all employees "whose welfare, as well as that of their families, is closely linked to the fortunes of Convair."

"During the past three years, times have been very tough. Under the free enterprise system we have the privilege to fail as well as succeed . . . The jet transport program lost a great deal of money . . . Employment has been reduced sharply . . ."

However, the jet transport program is now firmly under control, Famme continued. In 1961 the Corporation wrote off all the losses it had suffered, as well as those it expected to complete the program. In the General Dynamics annual report for 1962 Roger Lewis, Corporation president, reported that experience through the past year has confirmed that the final cost of the program at completion will not exceed prior estimates.

"The fact that these anticipated losses were kept under control was no easy job," Famme commented. "Our production people really lowered the boom on costs. Our engineering people came up with a fix for the 990 that was almost a major technical breakthrough in itself . . .

"At any point in the last couple of years General Dynamics could have called it quits. Lesser companies would have taken the cheaper route of washing their hands of the whole program.

"The fact that the Corporation backed the program to a successful conclusion is a testimony to its integrity . . . Because the Corporation stuck with the division—despite heavy pressures—and because the division had the technical ability to solve a tough problem, our reputation is untarnished and Convair jetliners are establishing an unmatched record for excellence and performance . . .

"So, the situation is rather ironic. The same program that caused our problem and cost too much money, with every day is increasing company good will and respect on the airlines.

"The Corporation itself has weathered the financial storm," Famme continued, alluding to the almost $80 million drop in bank borrowings and substantial increase in working capital **(General Dynamics NEWS, Feb. 20, 1963, April 3, 1963).** "The Corporation has demonstrated its inherent strength and vitality."

Solution of the jet transport problem had one important side effect for the division, Famme said. It renewed the Corporation's confidence in Convair capability through awareness that the costs were controlled and the fix achieved because the division worked extraordinarily hard and demonstrated original technical thinking.

Regarding new business prospects, Famme bore down hard on the myth of "make-work" projects.

"No programs will be handed to Convair on a silver platter. Make-work programs simply do not exist. We will get programs only because we have worked hard and anticipated the customer's needs," he declared.

"What we need at Convair today are new and better ways of doing things, new and better ways of designing products. The old ways aren't good enough . . .

"Convair is in a highly competitive industry. Dozens of other aerospace companies are battling us for fewer and fewer aerospace contracts. Compe-

(Continued on Page 2)

SRE Chapter Forms at SD

H. B. Day, supervisor of graphic reproduction at GD/Convair, heads a temporary slate of officers of the newly-organized San Diego Chapter of the Society of Reproduction Engineers.

Day, together with several other General Dynamics reproduction specialists, was instrumental in formation of the San Diego group, 39th SRE chapter, for all persons actively engaged in any phase of reproduction or related fields. Other GD men on the organization committee were Marvin Young, GD/Astronautics manager of reproduction; Roger Christ, head of General Atomic reproduction; Charles Barber of GD/Electronics technical publications.

Among initial officers who will serve until fall when permanent officers are elected is Charles Taylor of GD/Astro, elected second vice president at the April 15 meeting.

Meetings will be held once a month to exchange ideas and keep abreast of new methods, materials, and processes. Next dinner meeting will be May 13 at La Mesa Cotton Patch. For information call Day at ext. 2730, GD/Convair Plant 1.



MACSAVE-IT TRIO — W. R. Bruce, director of operations, hands MacSave-it trophies to Eric Torp (Dept. 91), high CIP suggester for March, saving company over $130,000 for change in method of payments into retirement fund; Howard Woodward and H. A. Mohr (both Dept. 101), February winners for joint CIP outlining new way of blanking sheet metal parts, saving $123,000.

GD/Convair Places Emphasis On Developing New Products

(Continued from Page 1)

tition is bitter. The other companies are as hungry as we are.

"Just how fierce is the rivalry can be seen in the counter-insurgency fighter . . . the COIN proposal for a light aircraft. It must be simple and not much harder to fly than a car is to drive. Target price per airplane is $100,000. It will be extremely difficult to produce at this figure, yet more than seven major companies and a dozen smaller ones are scrambling for the job!"

Famme said "We face a considerable challenge, but we have a historic talent for coming up with a new product, a new idea . . . The new product lines now budding indicate we have not lost the ability . . ."

As an example of such new products, a movie film clip was shown of a Convair-developed underwater vehicle in which the Department of Defense has shown keen interest, as well as pictures of a GETOL model (an airplane designed to take off and land on an air bubble). Included were movies of Little Joe II, SATS mats, and the C-141 empennage work.

"There are a lot more to come if we are to make Convair's tomorrow meaningful and rewarding," he added.

"Obviously there is no quick cure here—no easy road to success. But plain hard work and original thinking, coupled with our considerable technical ability, will add up to new programs and a solid future for us all.

"There is absolutely no doubt in my mind that Convair is equal to the challenge . . ."

GD/Convair Receives $50,000 Icing Study Contract From FAA

General Dynamics/Convair has received a $50,000 study contract from the Federal Aviation Agency, Aircraft Development Service, Washington, D.C.

Under the six-month contract, the San Diego-located division will be responsible for compilation of a design manual on ice-protection systems for light airplanes.

GD/Convair engineers will review and evaluate existing information on systems for single and twin-engine light aircraft—those under 12,500 lbs. gross weight—to produce the 600-to-700 page design manual.

The manual will cover such topics as how to calculate the rate of ice collection at operating altitudes, design guides for various methods of ice protection and removal, and methods of testing ice-protection equipment in wind tunnels and in flight.

The Federal Aviation Agency will make the study available to all manufacturers of light aircraft and companies producing ice-protection equipment for these aircraft.



OFF BOUNDS—Edith Summerfield (Dept. 92) observes no smoking sign in restricted area as safety department points up division regulations.

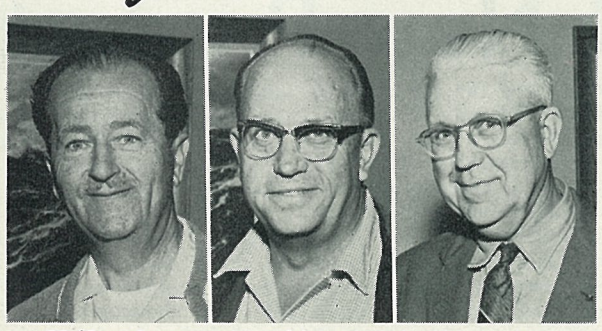
Caution Urged With Smokes

"Watch your cigarettes and don't burn!" warns M. C. Val Dez, GD/Convair senior safety engineer, as he reminds GD/Convair and GD/Electronics people of specific rules governing smoking in the plant.

"First of all, butts, matches, and other smoking refuse must be placed only in ash trays or containers provided throughout all facilities," he said. "Any department which becomes untidy and whose housekeeping is affected as the result of smoking will have smoking privileges withdrawn until the condition is corrected."

Other regulations to be observed rigidly include: no smoking during the last half hour of a shift which is not followed by employees on a succeeding shift, no smoking in rest rooms at any time, no smoking in any area where solvents or paints are handled, used, or stored, no smoking in stockrooms except at desks, and no smoking in "restricted—no smoking" areas.

Log Book Entries



GD/Convair men who celebrated their 25th anniversary last month are, from left, August Yorges, Dept. 133; L. E. Brown, Dept. 140; and J. V. Salter, Dept. 25-5.

Retirements

CONVAIR

AKERS—James F., Dept. 48-21. Seniority date Oct. 22, 1951, retirement effective Feb. 28, 1963.

BERG—Rupert C., Dept. 129. Seniority date July 16, 1951, retirement effective Feb. 14, 1963.

CRAGHEAD—Tannie C., Dept. 146. Seniority date March 5, 1954, retirement effective Feb. 18, 1963.

FROOM—Harvey D., Dept. 401. Seniority date March 31, 1953, retirement effective April 30, 1963.

GOWER—Nola S., Dept. 136. Seniority date Jan. 10, 1952, retirement effective Feb. 1, 1963.

McANDREWS—Olive G., Dept. 3-5. Seniority date March 9, 1953, retirement effective March 30, 1963.

PHILLIPS—Olive D., Dept. 148. Seniority date July 27, 1951, retirement effective Feb. 11, 1963.

RINKS—Dewey, Dept. 25-1. Seniority date May 13, 1940, retirement effective March 11, 1963.

ROSA—Frank S., Dept. 223. Seniority date Oct. 26, 1950, retirement effective Feb. 19, 1963.

RUSSELL—Roberta B., Dept. 16-7. Seniority date June 8, 1955, retirement effective Feb. 23, 1963.

SAVAGE—Dorothy W., Dept. 216. Seniority date Sept. 29, 1950, retirement effective March 30, 1963.

SJOLAND—Reinhold A., Dept. 400. Seniority date Oct. 30, 1950, retirement effective Feb. 6, 1963.

SNOWDEN—Irvin C., Dept. 218. Seniority date July 17, 1950, retirement effective March 26, 1963.

STARK—Edwin L., Dept. 14-8. Seniority date March 17, 1952, retirement effective Feb. 13, 1963.

TICE—Douglas, Dept. 48-11. Seniority date Dec. 12, 1955, retirement effective March 6, 1963.

UHER—Alfonso Jr., Dept. 215. Seniority date Nov. 28, 1955, retirement effective Feb. 7, 1963.

WADSWORTH—Clyde, Dept. 401-7. Seniority date Oct. 10, 1950, retirement effective Nov. 9, 1962.

Births

SAN DIEGO

PALMA—Daughter, Rosanne Marie 6 lbs., 15 oz., born April 16 to Mary (Dept. 23-6) and George (Dept. 92-0) Palma.

ROSE—Daughter, Lori Kay, 9 lbs., 2 oz., born April 5 to Mr. and Mrs. L. F. Rose, Dept. 6. Mother, Karen Rose, Dept. 960, Astro.

GD/ELECTRONICS

BARBER—Son, Corey Jay, 6 lbs., 10½ oz., born April 23 to Mr. and Mrs. Charles J. Barber, technical publications.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending April 12 and April 19.

Dept. 91, M. B. Showers, $27.80.

Dept. 102, J. W. Weisman, $70.30 (final payment).

Dept. 115, A. Reiter (two awards), $10 and $23.20; E. Romero, $10; G. E. Thompson, $10.

Dept. 128, R. V. Lucero, $20; R. F. Lanzo and B. F. Armas, Dept. 129, (two joint awards), $10 each; R. V. Lucero and R. E. Thompson (joint award), $10 each.

Dept. 131, C. R. Yokley, $10.

Dept. 401, J. R. Dravland and R. A. Zwolinski (joint award), $7.50 each.

Cost Improvement Proposal for week ending April 19.

Dept. 119, L. W. Stamper.

Personals

SAN DIEGO

We take this means to thank the many friends from General Dynamics for all of their thoughtfulness and kind expressions of sympathy in the recent loss of our loved one.

The family of
George E. Coffman (Fort Worth).

General Dynamics NEWS

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* * *

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GD/E Travel Desk Located in Bldg. 51

All arrangements for business trips of GD/Electronics people are being handled directly through a GD/E travel desk located within the new industrial relations office area, first floor of Bldg. 51, Plant 1.

Naomi Adams, as travel reservationist, may be reached through exts. 2108 or 744 for transportation, hotel, and rental car reservations between the hours of 8 a.m. until noon, 1 to 5 p.m.

She reports to S. N. Garff, GD/E manager of shipping, receiving, and traffic.

Anyone planning necessary business trips is urged to make contact with the travel desk as far before departure date as possible to allow time for best connections and accommodations.

Navy Officers Hear Value Control Talk

GD/Convair's value control program, particularly as it is used as a management tool to trim costs on new proposals and new programs, was outlined by President J. H. Famme at the Financial Management Conference, sponsored by the Bureau of Naval Weapons in San Diego last month.

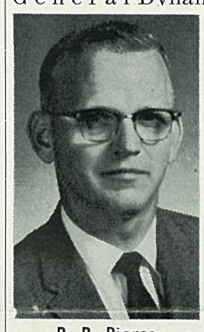
Famme drew on GD/Convair's experience in value controlling a complete program, in this case Little Joe II, from start to finish to show firm results in lowering costs, yet maintaining quality, through value analysis.

SD CHAPTER HEARS CONVENTION REPORT

Charles M. Keys and J. D. Meacham of GD/Convair technical publications gave reports on the recent National Society for Programmed Instruction convention at San Antonio, Texas, before the San Diego Chapter April 25.

Pierce Named GD/Electronics Purchasing Mgr.

R. R. Pierce assumes the position of manager of purchasing for General Dynamics/Electronics-San Diego this week, announces L. A. Wood, manager of material.



R. R. Pierce

Pierce succeeds Clyde L. Kimball who has left the company.

He steps into his new post from his former duties as supervisor of subcontracting and material estimating for GD/E Plants 1 and 2.

According to Wood, the new manager of purchasing will be responsible for all purchasing activity in addition to material estimating and material cost reporting for GD/E-San Diego. He also acts as Small Business Liaison Officer for both GD/E facilities.

A native of Oshkosh, Neb., Pierce joined the company in May, 1959, as purchasing agent for the former Stromberg-Carlson division at San Diego, now merged with GD/Electronics.

Before that he had headed the purchasing department at Scripps Institution of Oceanography and been purchasing agent for the Bill Jack Scientific Instruments Co., Solana Beach.

He majored in business administration at the University of Idaho and received further training in purchasing procedures at UCLA.

Canyon Facility Occupied Jointly

Rose Canyon facility is now occupied jointly by GD/Convair and GD/Astronautics people with the shift of Astro's Dept. 330 from Plant 19 (formerly Plant 2) to the Pacific Hwy. location the middle of April.

Now occupying the Bldg. 1 office area are 450 Astro support logistics personnel.

GD/Convair functions, totaling 270 people, remaining at Rose Canyon represent material control, manufacturing control, material sales, transportation, shipping and receiving, first cut and raw material stores, inspection, nurses, guards, Navy and AF representatives.

All GD/Convair people are located in warehouse areas of Bldg. 1 and 2, and offices in Bldg. 2.

GD/Astronautics is responsible for the cafeteria, security, fire protection, switchboard, mail room, first aid, and parking.

Britain Leases S-C Computer

Great Britain's United Kingdom Atomic Energy Authority has leased an S-C 4020 High Speed Computer Recorder from General Dynamics / Electronics-San Diego, with delivery scheduled this month.

The leasing agreement calls for complete service and maintenance by GD/Electronics specialists, who also will train operators.

Under the agreement, the United Kingdom agency has options to continue the lease on a year-to-year basis or to purchase the unit outright.

Other S-C 4020 units have been leased to the Applied Mathematics Laboratory, David Taylor Model Basin, Carderock, Md.; Los Alamos Scientific Laboratory, Los Alamos, N.M.; North American Aviation, Los Angeles, Calif.; Jet Propulsion Laboratory, Pasadena, Calif.; National Aeronautics and Space Administration, Huntsville, Ala.; and GD/Astronautics, San Diego, Calif.

Queen Planned For May Dance

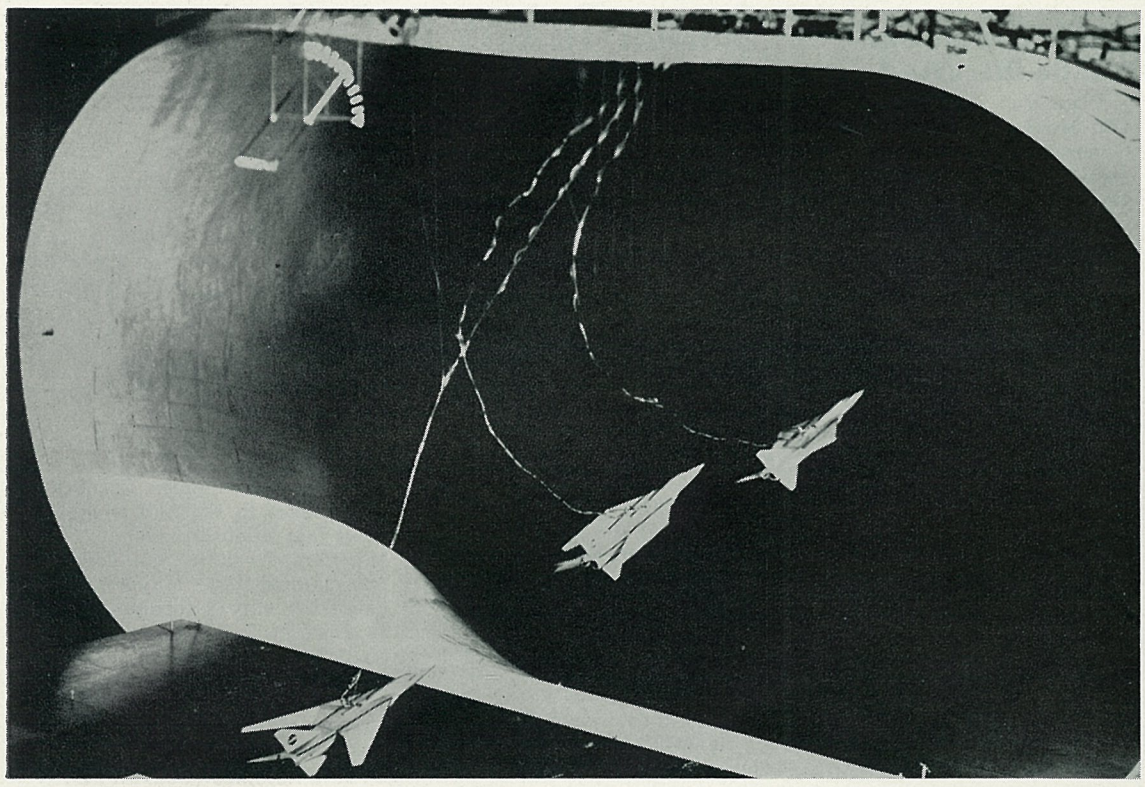
Some GD/Convair or GD/Electronics lady will reign as queen of the Management Club's May Festival, annual spring dance set for May 18.

The queen will be chosen from the beauties present at 10 p.m., said Art Ratz, general chairman for sponsoring material and production services department.

GD/Convair and GD/Electronics members and guests will dance to Walt Boronda's orchestra from 9 p.m. to 1 a.m. at the new Torrey Pines Inn, location of this year's affair.

Prizes, chosen especially for the ladies, will be handed out during the evening.

Tickets, at $2.50 a couple, are now on sale at all ticket outlets.



FREE FLIGHT—Multiple exposure photo shows model in free flight at NASA's Langley Research Center. It flies in moving stream of air with cables providing electrical signals to controls and compressed air source simulating jet engine thrust. Note various wing positions.

Development of New Pivot Concept Opens Way For Variable Wing

It's been called, among other things, the "Flying Switchblade" and the "Swing Wing," but in official Air Force parlance it's the "variable sweep wing configuration."

By any name, however, experts envision the F-111's variable wing as one of the most significant aviation state-of-the-art advancements in recent years.

The principle, as worked out by NASA engineers, consists of a wing with a base fixed to the fuselage, while the outer portion of the wing pivots on a hinge.

With wings extended straight out, the airplane cuts into as much air as possible, facilitating short takeoff or slow-speed landings. As the plane moves faster than the speed of sound, the wings fold back on the pivot like a giant hawk's, reducing drag to a minimum.

The new wing will give the F-111 both a high-speed and low-speed capability—a dual talent no other airplane has enjoyed. The plane will be able to take off from either carrier decks or short, unimproved runways, making it a natural for brush warfare.

In the air, the F-111 will be capable of loitering (Navy version), or dashing in on supersonic sorties at either tree-top or high-altitude (Air Force version).

All this capability, thanks to the variable wing.

Virtues of the wing don't stop there. Experts claim the variable wing is destined for use on supersonic transports. The big commercial liners wings could be extended for subsonic flights over populated areas, then tucked in for faster-than-sound flights over remote areas. Some see this as the only solution to the pesky sonic-boom problem.

Since it offers such great promise, why hasn't the variable wing been used before? Actually, the variable wing, after several early reversals, has been rapidly developing during the past decade.

The original idea of varying angle of wing sweep according to airplane speed has been traced back to a version of the German-built Messerschmitt P-1101. The prototype flew in 1944 and reportedly fell into Allied hands in May, 1945.

After the war, the National Advisory Committee (now NASA) initiated a program which resulted in the Bell X-5, with variable sweep from 20 to 59 degrees.

Then Grumman — GD/Fort Worth's partner in the F-111 program—stepped in with the swept-wing Grumman F101-1.

About the same time, Dr. Barnes Wallis of Vickers-Armstrong in England came up with a proposal for a supersonic airliner, using variable sweepback on the wings. This was called the "Swallow" project.

Though some of these early models and prototypes met with limited success, they all had the same glaring fault: wings were adjusted by sliding forward along the fuselage as the wing tip moved back.

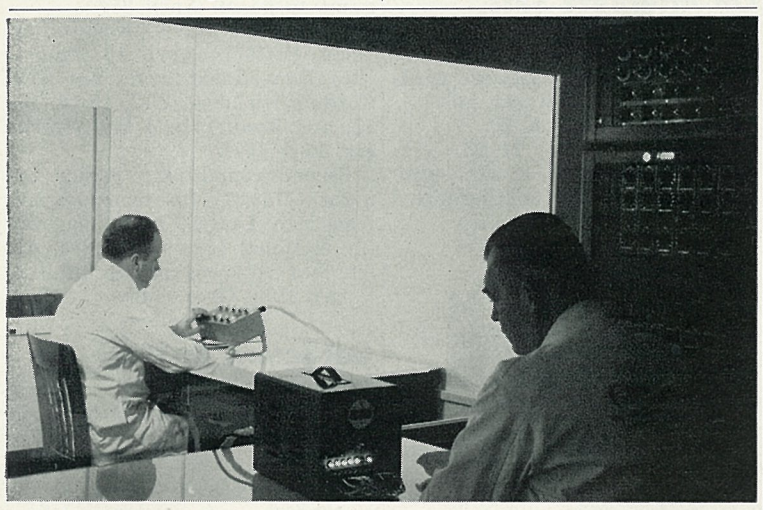
This sort of design called for a massive mechanism which proved impractical. Said a government directive of one model: "Tests . . . indicated longitudinal instability at relatively low angles of attack in the high-sweep attitude, and at moderate angles of attack in the low sweep attitude . . . lack of significant control . . . and possibility of complete loss of control in the event of engine failure."

In short, stability and control characteristics were largely unfavorable.

In 1959, TAC stated its requirements for a multi-purpose fighter to NASA. By 1960, Engineer John Stack and a nucleus of men from the Swallow project had evolved a system—based on original work by Thomas A. Toll—in which the pivot point was placed out on the wing away from the fuselage.

Two of the engineers who worked in the early Swallow project, William J. Alford and Edward C. Tolhamus, applied for a patent on the principle in July, 1960.

The Air Force took its requirements to industry, with the GD-Grumman team winning out in one of the longest and most exacting competitions in history.



UNDER STRESS—GD/Astro space science laboratory personnel utilize LOGIT equipment to measure reasoning, memory and decision-making skills. Bernard F. Pierce, left, is subject, R. L. Bottoms, tester. Latter looks through one-way window as former reacts to problems by pressing buttons with score being recorded by lighted unit in foreground.

Test Device Developed to Gauge Loss of Efficiency Under Stress

More than 3½ million problems to measure man's reasoning, memory, and decision-making capabilities can be provided by a unique space-age device developed at General Dynamics/Astronautics.

It is a Logical Inference Tester, called LOGIT.

Astro's life science laboratory scientists under Dr. R. C. Armstrong, M.D., are employing this and other testing devices in simulating orbital missions in a space station. Of primary concern is the deterioration of an astronaut's skills under stress of space flight as well as assistance to engineers in designing interiors and equipment of vehicles.

Because man is prone to compensate for inefficient design by additional effort, direct measures of the effectiveness of design are difficult.

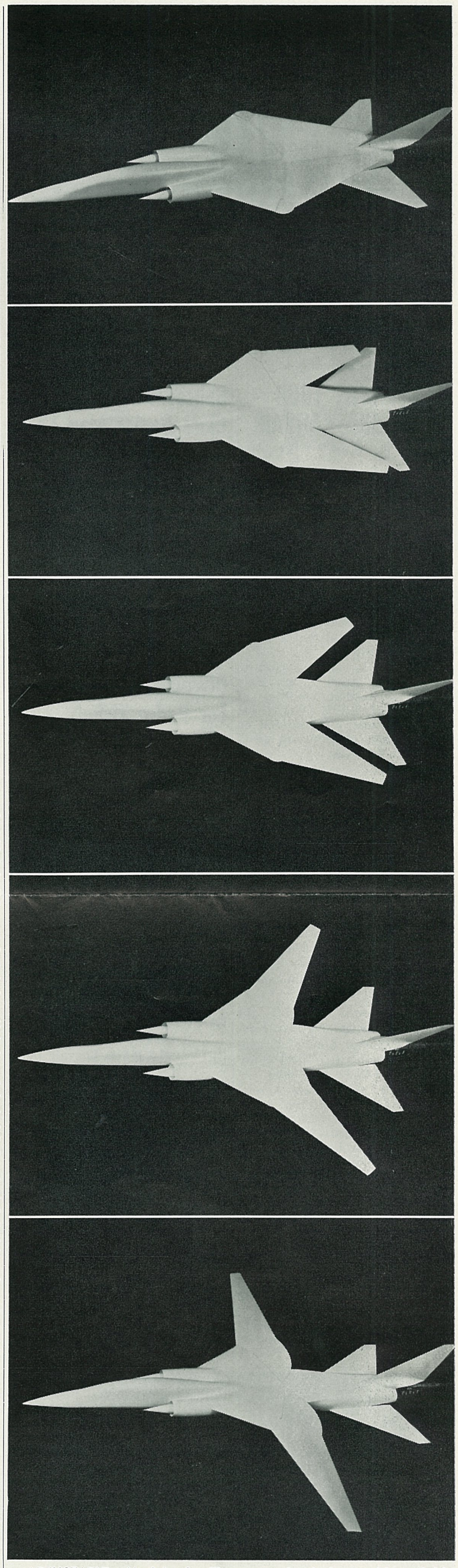
However, studies through measuring devices like LOGIT enable scientists to calculate more accurately the actual loss of astronaut efficiency brought on by equipment design inefficiency.

Life science laboratory scientists serve as "astronauts" to provide test subjects for LOGIT.

First, through two-way instrumentation, the subject establishes and demonstrates on successive trials, with the fewest possible moves, the correct order for pressing 10 buttons. Performance is measured in terms of time and the number of moves required.

Next, the element of stress is introduced by varying the time permitted for the decision from one second to five minutes. LOGIT processes can be accelerated to require extremely quick judgments.

Comparison of tests made under the two conditions give valuable indication of the subject's loss of skill under stress.



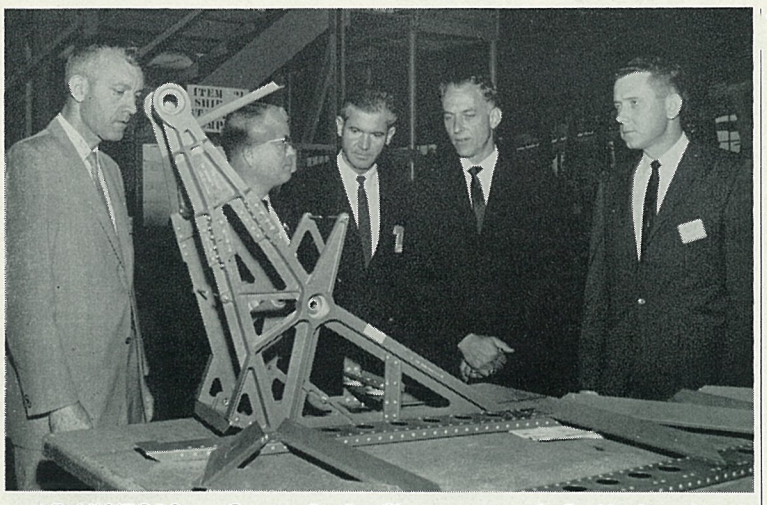
ADJUSTABLE—Model of military attack airplane with variable wing is shown prior to wind tunnel tests at NASA's Langley Research Center. Model was tested through speed ranges up to 2,000 mph. Wing panels are extended for takeoff, retracted for high speed flight.

GD/E Earns Contract For Radar Systems

GD/Electronics-San Diego has received a letter-order contract for 20 advanced radar systems for the Navy's A5C Vigilante.

GD/E developed the radar under a series of contracts from North American Aviation's Autonetics Division. To date, 110 production models of the radar systems have been delivered.

The radar is a sub-system of the REINS (Radar-Equipped Inertial Navigation System) which North American is producing.



AF VISITORS — Capts. R. P. Clevenger and C. M. Leggitt, at GD/Fort Worth in AF Education-With-Industry program, and Capt. Ted Goode (center), based at GD/Astro, are shown C-141 empennage component by Paul Pearson and R. W. Miller (second and fourth from left) during tour of GD/Convair plant.

AF OFFICERS TOUR ASTRO AND CONVAIR

Capt. R. P. Clevenger and Capt. C. M. Leggitt, Air Force officers based at General Dynamics/Fort Worth this year in the Education - With - Industry program, spent a week in San Diego last month viewing other General Dynamics divisions.

At GD/Astronautics they received briefings on the Atlas systems, factory operations, advanced product planning, and engineering research and development, material and procurement activities.

During their one-day visit to GD/Convair April 17, they viewed production facilities of Little Joe II, SATS mats, C-141 empennage and were briefed on research and development projects, including Laser.

Visits were coordinated by E. W. Thurston Jr. of GD/Astro educational services and H. W. Rubottom of GD/Convair educational services.

COMPUTER PANEL MEETS ON COAST

Fifty representatives of nine General Dynamics Corporation divisions met in San Diego this week during the seventh General Dynamics Computer Panel meeting.

Sessions were held at the OceanHouse with Thomas Kennedy of Canadair Limited as general chairman. GD/Electronics-San Diego was host division.

Technical papers and special reports on fifteen different topics were presented. Astronautics was host for a demonstration on how Atlas flight test data is processed through computers with Carl E. Diesen, manager of data processing at Astro, directing.

The Computer Panel includes members from 11 General Dynamics divisions who meet for discussions and presentations in the field of scientific, business and management information processing. The initial meeting dates back to 1957.

Robert Moore of the Corporate staff in New York acts as overall coordinator.

Ballroom Dancing Class Begins May 13

Astronautics Recreation Association will open a new intermediate ballroom dancing class May 13 for a 12-week run. Sessions will be held at 7:30 p.m. each Monday in ARA Clubhouse.

Instruction is available for those who have completed a recent beginner's class. Cost is $9 per person. No advance registration is necessary.

Next beginning dance sessions will be held in the fall, according to Ludy Moeller, ARA commissioner.

Discount Offered For Padre Tickets

Industrial Recreation Council exchange tickets now available at employee services outlets will permit GD/Astro, GD/Convair and GD/E folk to see Padre baseball at substantial savings.

Tickets are good for games on May 15, June 11, July 1 and 11, Aug. 5 and 27, and Sept. 3. Game time is 8 p.m. all nights, at Westgate Park.

When presented at the Padre box office, exchange tickets entitle holders to purchase $2 box seats for $1.25, or general admission ($1.25 value) for only 50 cents.

Mooney Outstanding In Precision Flying

Walt Mooney of General Atomic, formerly of GD/Convair Dept. 6, outflew all contestants in the recent San Diego Air Games to have his name engraved on the perpetual trophy donated by GD/Astronautics.

Thousands of spectators were treated to feats of precision flying, stunting, and competitive flying during the two-day meet, April 20 and 21, at the Brown Field site. The air games are sponsored by the SD Junior Chamber of Commerce.

POP WARNER SIGN-UP WILL BE SATURDAY

Registration for Kearny Mesa Pop Warner Football Association will be May 4 from noon to 4:30 p.m. Information on locations is available by calling 277-2750.

Trip to Old Mexico Will Be Discussed

Plans for a special trip into Old Mexico will be outlined to General Dynamics people next week (May 7) at a meeting in the Convair executive dining room, 7 p.m.

Jim Hardison of GD/Convair Dept. 15, who conducted travelers from CRA - ARA Spanish classes on a similar tour last summer, will explain details of this year's trip, set for the last two weeks in August.

Final arrangements pend the desires of interested General Dynamics families, although present plans call for round trip by train to Mexico City. Approximate cost of transportation, hotel and meal accommodations will be $350 per person.

All General Dynamics people in the San Diego area are invited to join and attend the preliminary meeting on the Tuesday night date.

GD/Astro Wife Trap Winner

A GD/Astro wife almost brought home the ladies' state champion trapshoot title with her marksmanship at the California State Trapshoot held at Kingsburg, Calif., last month.

As it was, Edna Gatterman won the preliminary ladies' handicap match, scoring 89 out of a possible 100 at 18 yards. In the finals, held in driving rain, wind, and hail, she scored 90 to place second.

She and her husband, Warner, were the only General Dynamics shots competing in the annual state meet. Gatterman won a medal for his 194 score in the 16-yd. double A event.

Paul to Describe GLOTRAC System

A special talk on Astronautics' GLOTRAC system, plus telemetering developed for Projects Mercury and Gemini, will be presented May 14 at the Atlas Room, Town and Country Hotel in San Diego.

C. A. Paul, electronics manager of manufacturing operations, will present the talk before the American Society of Tool and Manufacturing Engineers, San Diego Chapter.

Tickets for the affair may be obtained from Earl Williams, ext. 2783 at Astro, or George Webber, ext. 1100 at GD/Convair.

ARA-CRA Lens Clubs Plan Joint Meeting

The combined ARA-CRA Camera Clubs will meet May 5 at 7:30 p.m. in Photo Arts Bldg., Balboa Park.

Program will feature a group critique of slides and prints brought by members. ARA Commissioner Ken Rinker said the evaluation will aid club members in preparing for the group's upcoming quarterly contest.

Season Tickets to Circle Arts Offered at 30 Pct. Reduction

General Dynamics theater-goers may purchase season tickets to the coming summer season at Circle Arts Theatre, through arrangements of Convair and Astro Recreation Associations.

Special Sunday matinees have been scheduled exclusively for General Dynamics people holding the season tickets for the eight summer performances.

Prices, at a 30 per cent reduction of regular season ticket rates, range from $23 to $11, depending upon seat location.

Brochures and seating charts are now at all employee services locations for the convenience of GD/Astro, GD/Convair, and GD/Electronics people. A $5 deposit for each seat must be paid at time of sign-up, with the balance to be paid by May 20. Payments can be made in weekly installments, if desired.

General Dynamics dates will be: "Wildcat," starring Martha Raye, June 2; "Carousel," with Ann Blyth and Peter Palmer, June 16; "Damn Yankees," with Shelley Berman, June 30; "Flower Drum Song," starring Pat Suzuki, July 14; "Paint Your Wagon," with Frankie Laine, July 28; "Wish You Were Here," Aug. 11; "Can-Can," Aug. 25; "Annie Get Your Gun," with Gisele McKenzie, Sept. 8.

The Circle Arts Theatre, off Hwy. 395 on Clairemont Mesa Drive, has been renovated for the 1963 season with sound proofing, air conditioning, and heating systems.

ARA, CRA Pistol Shots Hold Team Contest

Semi-annual contest between ARA and CRA pistol shooters was held Sunday (April 28) at San Diego Police Pistol Range, Home Ave. and Federal Blvd.

At stake were individual trophies for members of the winning team, plus a large trophy.

Representing CRA in the Camp Perry Police Course match were W. G. Walker, Joe Williamson, Jim Halfacre and Vern Mardis. Roland "Red" Schneider, Ralph Sanderlin, Al Schindler and ARA Commissioner Gordon McPherson fired on behalf of ARA.

Salvage Yards Open On Alternate Sats.

Alternating Saturday schedule for employee sales at GD/Convair and GD/Astro salvage yards for the next four weeks is:

GD/Astro—May 4, 18.

GD/Convair—May 11, 25.

Hours are from 8 a.m. until noon. Children are not permitted in the salvage yard areas.

Rocket Club Opens Essay Competition

Papers dealing with significant aspects of the historical development of rocketry and astronautics may now be entered in the National Rocket Club's 1963 essay competition.

Winner, announced in March of 1964, will receive the Goddard Historical Essay Trophy and $200.

Entries should be submitted by Nov. 1 of this year to Goddard Historical Contest, in care of National Rocket Club, 1745 K St., N.W., Washington 6, D.C.

Toastmasters Slate 'Week'

General Dynamics Corporation employees in the San Diego area will join in observance of "Toastmasters Week in San Diego" as proclaimed by Mayor Charles Dail for May 4 through May 11.

District 5 Governor Cy Campbell (Astronautics) indicated the week of awards, presentations and special activities will be climaxed May 11 with a spring conference at U.S. Grant Hotel.

Ken Samples (Convair) is Area 5 governor and display chairman.

Bob Byron, Area 5 speech contest winner, will compete with speakers from seven other local areas for the right to take part in the regional contest in June at Los Angeles.

Ray Sodomka (Astronautics) president, and Ed Wynn (Astronautics), vice president, of Dynamics #457 Toastmasters invited all employees to take part in regular Thursday (6 p.m.) activities of the group with meetings held at the Convair executive dining room on Pacific Highway.

Dynamics Unbeaten In Volleyball Play

Astro's Dynamics volleyball team swept through first half of IRC American League play undefeated.

In April 17 matches Dynamics downed City Engineers, 15-5, 15-9. Gasco won over CSEA, 15-13, 15-10.

In National League standings Ryan was undefeated with one game to go on April 25.

Miramar beat GD/Electronics, 15-14, 15-10 in April 18 contest. Fire Department won over GD/Convair Hi-Lows, 15-2, 15-16, 15-12, and Ryan ruined the Wreckers, 15-6, 15-6.

Second round play begins tonight (May 1) for teams in the American League and tomorrow for National League players. All matches are played on Balboa Park's Muni Gym courts.

Gardeners to Hear Insecticides Talk

Garden Club members from GD/Astro, GD/Convair, and GD/Electronics will meet tonight (May 1) to hear a talk on insecticides.

A representative from Drestruxal Corp. will answer questions on insect problems at the joint ARA-CRA meeting, 7:30 p.m., Floral Association Bldg., Balboa Park.

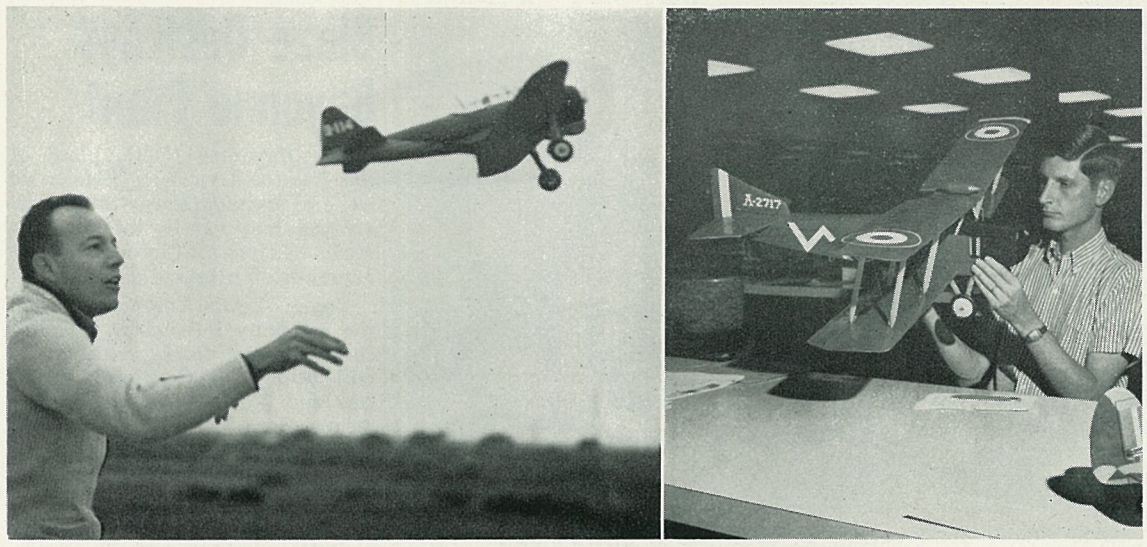
Door prizes will be given and refreshments served.







AROUND THE BASES—At right, Senator Margaret Chase Smith, Maine, receives Atlas model from GD/Astro's Emile Genest during recent tour of Vandenberg AFB. In center, Ed Johnston, left center, recently succeeded Gene Sims, right center, as ARA president at Vandenberg. Here they "ham it up" with Gordon Gill and Jack Anderson, Santa Maria and Lompoc recreation directors. In photo at left are ARA cagers who walked away with Cocoa (Fla.) City League championship. Kneeling are Coach Bob Noe, Dick Goodwin, Wayne Mitchell and Don Stradley. Standing are Art Roeder, Dave Butler, Charlie Tuck, Ray Poole, Jim McDougal, Farley Adams.



SOARING MIDGETS — Don Larsen (left), CRA Aeromodelers commissioner, launches his Japanese Zero gas-powered scale model in recent open Free Flight Flying Scale Model contest. Plane later crashed! At right, Nat Antonioli of GD/Convair Dept. 6, judges models of GD/Convair son John Oliveria, who placed second in junior standings.

Sports & Recreation

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m. to 1 p.m., Clairemont Mesa Flying Site.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy., open to all General Dynamics people.

CAMERA CLUB—Joint CRA-ARA meeting May 5, 7:30 p.m., Photo Arts Bldg., Balboa Park.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA meeting tonight (May 1), 7:30 p.m., Floral Association Bldg., Balboa Park.

GLIDER CLUB — Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF — IRC tournament May 4-5, 11-12.

GUN CLUB — Monthly club rifle, skeet, trap matches May 5; open trapshooting Saturday afternoons, starting May 4, 1-5 p.m., Gillespie Field Range. Meeting May 14, 7 p.m., Gillespie Field Clubhouse.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children under 12, 25¢.

PISTOL CLUB — Club match May 12, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow night (May 2), 8 p.m., Harbor Drive club headquarters.

RIDING CLUB—Meeting May 2, 7:30 p.m., Gillespie Field Clubhouse.

ROCKHOUNDS—Weekend trip to Tick Canyon May 11-12. Meeting May 9, 7:30 p.m., Gillespie Field Clubhouse.

SNOW SKI CLUB — Annual spring weekend trip to Mammoth Mt., May 3-5.

SOFTBALL — "Slow pitch" league forming. Enter departmental teams before May 16 with Pete Beyrer, ext. 1245, Plant 1.

SPORTS CAR CLUB—Meeting May 1, Convair cafeteria, Pacific Hwy., 7:30 p.m.

STAMP CLUB—Meeting May 2, Convair executive dining room, 7:30 p.m.

SWIMMING — Family swim night Saturday (May 18), Mission Beach Plunge, 7-9 p.m. Free tickets at employee services.

VOLLEYBALL—Second round IRC tourney starts tonight (May 1) and tomorrow, Muni Gym, Balboa Park.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Al Reiter's 71 Low in Sweeps

Al Reiter (Dept. 115) was back in stride again as he paced the field with low gross score in the April CRA golf tournament.

Reiter's 71 bested Norm Kuntz (also Dept. 115) who scored a 77 for runner-up spot in the April 13-14 tourney over Carlton Oaks fairways.

Jerry Swarts (Dept. 48) was first low net with 68. One stroke behind was Ralph Way of Dept. 400. All were entered in the 0-13 flight.

In the 14-18 flight Curt James and Bill McCarthy, both Dept. 6, tied with 84 for low gross. Bob Fagan (Dept. 6) was low net with 73. John Evans (Dept. 25) and Bill Whitley (Dept. 6) stood in a tie for second low net with 74s.

In the 19 and over flight Ernie Demarus (Dept. 400) and Glen Faringer (Dept. 15) both stroked 97s to share first low gross honors.

Frank Garrison (Dept. 115) had first low net score of 67. Bill Dean (Dept. 97) was second low net scorer with a 73.

Color Guard Signed For Annual Parade

Color Guard of CRA Riding Club will appear in the annual parade at Escondido Saturday, May 11.

All members and friends are urged to line the parade route to encourage the precision riding team which has won many honors from its appearances.

Show Models Span 50 Years Of Plane Types

A span of aeronautical history from the early 1900s to modern day aircraft was represented by the 30 scale models entered in CRA Aeromodelers' annual Free Flight Flying Scale contest last month.

As usual, Los Angeles modelers swept the field in the open competition, taking all three places in the senior open gas-powered division, first and third in the junior open, and Harold Warner of Arleta, Calif., took the "old-timer" rubber-powered flying scale event with a model of a Bleroit monoplane.

John Oliveria, son of GD/Convair's John Oliveria, earned second spot in the junior division with a finely-detailed model of an Armstrong Whitworth AK-9, a World War I bomber-reconnaissance plane. The model, finished only the night before, was not in the best flying trim or it would have placed higher in overall standings.

Larry Peterson (Dept. 6), Aeromodelers' president, won best low-wing honors for his Mitisubishi "Claude."

Race for best (or worst) crack-up was hotly contested between Don Larsen, CRA commissioner, and Robert Swan, a junior flyer from Chula Vista, both flying Japanese Zeros. The judges agreed that both crack-ups were disastrous but gave the nod to the junior entry. He was "rewarded" with a stack of balsa wood and a futuristic trophy created by Nat Antonioli (Dept. 6), one of the judges.

"The Sunday flying session contained some spectacular moments since some of the newer ships were out of trim," said Peterson. "Fortunately, the contestants and spectators were nimble."

Models entered showed a wide range of aircraft, with such planes as Spitfire, SE-5A, P51B, Stinson 049, DH5, Fairchild F-24, Bucker Jungmeister, Bebe Jodel, Aeronca, 1911 Caudron, Gere bi-plane, Fokker DR1, Cessna L-19, Hawker Hurricane, De Haviland TK-5 faithfully produced.

Much of the success of the contest was due to the patience and discernment of judges, Bill Service and Antonioli (both Dept. 6), Phil Colburn of GD/Astro, and Lloyd Hemmingway of Ryan.

Lapidary Equipment Shifted To Quarters at Gillespie

Lapidary equipment of the CRA Rockhound group is being set up at Gillespie Field with regular weekly instruction to start May 15, Dan Whorton, commissioner, reported.

As soon as electrical and plumbing connections are completed, the rock cutting and polishing equipment will be available to GD/Convair and GD/Electronics people on Wednesday nights from 7 to 9 p.m.

No daytime classes for second-shift people will be scheduled until enough people sign up, said Whorton. Anyone interested may call him on ext. 2058, Plant 1.

Next weekend field trip for Rockhounds will be May 11-12 to Tick Canyon, near Palmdale. There they will search for howlite and blue agate.

Ralph Phillippi of GD/Convair Dept. 6 is in charge of the trip and will make maps available to all members. They may be picked up at CRA headquarters, or at the May 9 meeting at Gillespie Field Clubhouse, 7:30 p.m.

GD/Electronics Among Firms Chosen in New Navy Project

Over 35 members of a Navy-Industry team established to develop an advanced avionics system for a new Navy program were hosted by General Dynamics/Electronics-San Diego two days last month, April 16-17.

GD/Electronics has been chosen by the Naval Air Development Center at Johnsville, Pa., under the Bureau of Naval Weapons, as one of the contracting firms participating in fabrication of a developmental data processing system for the A-NEW Advanced Anti-Submarine Warfare Avionics System.

Representatives from Naval organizations and team member companies throughout the country toured GD/E facilities during their stay in San Diego. A program presentation and sub-panel sessions were held.

This meeting was one of a regular series held for the purpose of review and direction of the program.



GD/E HOSTS TEAM — Members of Navy-Industry team board company bus following tour of GD/Electronics - San Diego facility during recent two-day meeting in San Diego.

Model Railroaders To Hold Convention

Several ardent model railroaders from General Dynamics will travel to Bakersfield, Calif., this week to take part in the annual Pacific Coast Region National Model Railroad Association convention, May 3-5.

Karl Busch of GD/Convair will have his hands full as chairman in charge of all convention arrangements.

Dave Kahler, also of Convair, will be indoctrinated in his new posts as 1963-64 membership chairman and chairman of next year's Pacific Coast Region convention.

One of the judges for the model contests will be Robert Durnell of GD/Electronics, current superintendent of the region's San Diego division.

Among others planning to attend is Ken Lawson of GD/Convair.

GD/E Wives to Meet May 9 at Luncheon

"Diamond Jim's" will be the scene of the monthly luncheon for all GD/Electronics wives May 9.

The restaurant is located in Grossmont Center, off Highway 80 at La Mesa.

Social hour will start at noon with luncheon at 1 p.m. Price is $2.25 including tax and tip. A door prize will be furnished by CRA.

All ladies intending to be present must call their reservations in by next Monday (May 6) to any of the following: Mrs. John Gastler, hostess, 444-2687; Mrs. Richard Barnett, 273-4451; Mrs. Bill Ward, 276-5634; or Mrs. Roy Bond, 466-3640.

Vern Mardis 'Doubles' In Pistol Events

Vern Mardis (Dept. 34) was double winner of both Police Course and Short National events in CRA Pistol Club competition April 14.

Mardis won the .22-cal. Police Course with a 286. W. G. Walker (Dept. 6) was second with a 282.

In the .22-cal. Short National Mardis had a 283. Joe Williamson (Dept. 401) came next with 278 and Ralph Picard of GD/Electronics was third with 276.

Horsemen Plan Ambitious Trip In Backcountry

Plans are going ahead for CRA Riding Club's big annual trail ride of the year, set for over Memorial Day weekend the end of this month.

Tentative arrangements call for two days of riding and a campout in the backcountry with horsemen on the trail five to six hours each day. An old-time barbecue, with Western music, will highlight Saturday night at the Los Caballos camp site.

According to the club's president, Tommy Thomason, the group will meet near the northeast end of Loveland Reservoir at Japatul Road, south of Alpine, to start the first day's ride.

Riders will cross Highway 80 near The Willows, follow the trail through Viejas Indian Reservation to the Allen and Clark's Rancho near Descanso, where the chuck wagon with the camp gear will be waiting.

The second day's route will take them up Boulder Creek to the California Riding and Hiking Trail, through Cuyamaca Park to Los Caballos Campgrounds.

Committees will be named and final dates and times established at tomorrow night's (May 2) regular meeting at Gillespie Field Clubhouse, 7:30 p.m.

GD/Electronics people are especially invited to attend, said Thomason, who pointed out that all General Dynamics employees may join the coming trail ride.

'Slow Pitch' League To Organize Soon

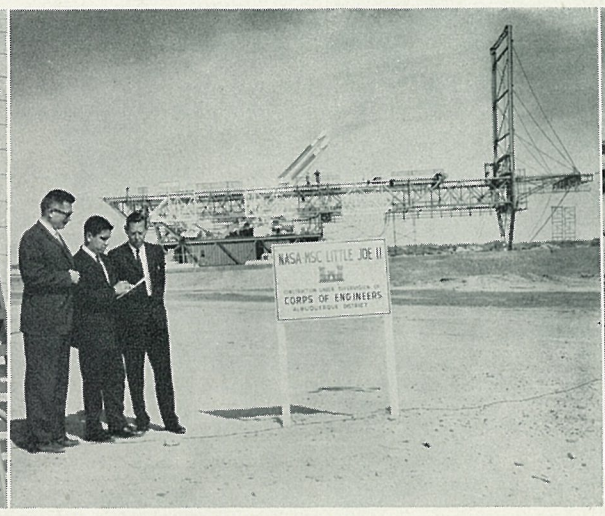
Play ball time is back again as "slow pitch" softball league organizes for action this month.

Teams from GD/Convair and GD/Electronics departments must be formed and reported to Pete Beyrer of CRA, ext. 1245, Plant 1, before May 16.

League play will start the end of May or first of June, said Beyrer, with one game a week scheduled.

The teams, 10 men each, will use a 12-inch ball and "slow pitch" rules. This year bases may be moved back to 75 feet to make the games tighter and more competitive.







ON SITE AT WHITE SANDS — In first shots taken at White Sands Missile Range, N.M., as GD/Convair personnel arrive for Little Joe II launch operations are (at far left) Henry VanGoey, NASA assistant resident manager in charge of engineering; O. L. Todd of GD/Convair, in charge of operations support; J. S. Boaz, GD/Convair site administrator; H. K. Cheney, GD/Convair's Little Joe II deputy program manager, launch operations; William Frye, NASA engineer in charge of Little Joe II operations at WSMR. In center photo are Cheney; Ernie Reyes, NASA engineer coordinating GD/Convair activity at WSMR; and Todd with Little Joe II service tower in horizontal position for rework in background. In photo at right are Charles M. Davis, first employee hired at WSMR for Dept. 311, W. H. Odle, GD/Convair facilities engineer, and Boaz consulting during installation of launcher rails.

Blaze Destroys Bayonne Plant

The Bayonne, N. J., plant of the Electro Dynamic Division of General Dynamics was totally destroyed last month in one of a series of fires that swept the New Jersey-Staten Island area.

Roger Lewis, president, said the company intends to meet all commitments to customers and will utilize all Corporate facilities and possible outside sources in order to do so. Electro Dynamic, manufacturers of electric motors and generators, employs approximately 500 persons.

Raymond B. Carey Jr., division president, said temporary facilities already have been set up at the Englander Co. Plant and purchasing, engineering and supporting groups are working there.



HEAVY DUMMY—Abort tower is placed on top GD/Convair-designed boilerplate payload to be used in qualification checkout of Little Joe II launch vehicle at White Sands Missile Range this year.

Physicist to Present Paper at Conference

Dr. Esther Krikorian of the General Dynamics/Pomona physics group (Dept. 6) is scheduled to present a paper May 13 at a conference on single-crystal film at Philco Scientific Laboratory, Blue Bell, Pa.

Navy to Test GD/Electronics' Terrain Radar

First military trial of the terrain following radar developed by General Dynamics/Electronics-San Diego will begin this month under direction of the Navy.

A high performance military jet aircraft, the Navy Skyhawk, will be used for first jet flight evaluation. First flights will be at low altitudes in the San Diego area with assistance of GD/Electronics' engineering. The Navy will continue with a 60-day flight evaluation of the system at its Patuxent River, Md., Naval Air Test Center.

The compact system, weighing only 40 pounds, has been successfully tested by GD/Electronics in B-25 and B-26 aircraft with both automatic and pilot-guided flights.

Purpose of the system is to aid aircraft and drones to fly safely at low altitudes across any terrain and water—in fog, rain, or darkness. By setting the system to keep aircraft above all obstacles, the pilot can avoid collisions with ground obstructions.

In military applications, even under zero visibility, it will enable pilots to escape detection by early warning radar by flying so low that such devices do not detect the aircraft.

Use in both commercial and military aircraft will permit blind let-downs through cloud cover to non-instrumented airfields. It also is a vital safety device for a pilot who drifts off course during adverse weather.

Dummy Payload Built For Use on Little Joe

GD/Convair's own version of a dummy payload to check out initial operations of Little Joe II launch vehicle will be leaving the San Diego plant, along with sections of the first vehicle assembly, some time this month bound for White Sands Missile Range, N.M.

(First launcher, three truckloads of disassembled parts, moved out of Plant 1 the morning of April 22 for on-schedule arrival at White Sands. This schedule was set up approximately a year ago and is being met, said J. B. Hurt, GD/Convair Little Joe II program manager.)

The low-cost simulation of the North American Aviation Co. test payload, with its abort tower and abort motor, will top the height of the entire Little Joe II vehicle, and actually weigh more —or about 17,000 pounds.

Made of ¼ and ⅜-in. steel boilerplate to GD/Convair specifications by Colby Crane Co. of Seattle, Wash., it duplicates, as nearly as possible, the shape, size, weight, and center of gravity of the North American article.

The dummy unit is designed to simulate the shape and weight of the command module, or upper section in which astronauts will ride in the Apollo spacecraft, and the service module, which will contain motors, fuel, telemetering equipment, and instrumentation.

The GD/Convair boilerplate version was built purely for a true checkout of the Little Joe II launch vehicle, being constructed for National Aeronautics and Space Administration for sub-orbital testing of the unmanned Apollo spacecraft and escape system.

Next step, following first qualification checks with the make-believe payload, will be a checkout with a North American boilerplate payload containing all of the separation provisions of the actual Apollo command and service modules. And, from there, launch tests will go on to use a prototype more closely resembling the Apollo modules.

Qualification launches at the White Sands site are slated for mid-year.

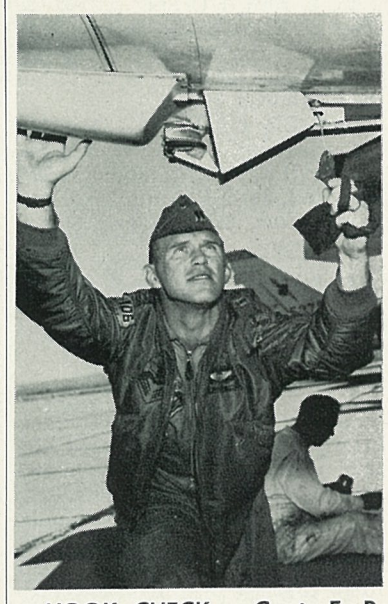
F-106 Arrested By Tail Hook

"Real smooth, no jolts," was the word from the Air Force pilot slamming an F-106 against a steel cable at 118 and 145 mph in tests of a new portable jet aircraft arresting barrier at the AF Flight Test Center, Edwards AFB, Calif.

The F-106 and F-102, Convair-built jet interceptors, together with two F-100s made 12 simulated landing arrests in recent successful completion of one phase in a continuing two-month series of tests of the arresting device.

All of the craft making the high-speed runs were stopped safely and smoothly from 700 to 950 feet from point of catching the cable with the steel hook under the tail of each plane.

The portable barrier, which can be flown wherever needed in an AF cargo plane, consists of two 4,800-lb. hydraulic brake systems, set opposite each other on both sides of the runway. They are fastened by removable stakes and earth anchors.



HOOK CHECK — Capt. F. R. Williams of 456th FIS, Castle AFB, Calif., examines tail hook of F-106 before starting test run against new AF arresting device. —USAF Photo.

GD/Astro Adopts TV Technique, Checks Cleanliness of Parts

Microscopic contaminants which, if present in excessive degree, might threaten hydraulic support systems for Atlas boosters, are now being spotted in General Dynamics/Astronautics receiving-inspection (Dept. 143-2) the modern way—on television.

The application of "micro-TV" to clean room operations was developed through joint efforts of General Supervisor S. S. Smith's receiving-inspection group, and GD/Astro's motion pictures and television (Dept. 124) under Television Supervisor L. E. Steadman.

Major advantage of the new technique is that it's "easy on the eyes."

Certain hydraulic parts entering the Dept. 143 clean room in Bldg. 5 are flushed with a solvent such as trichlorethylene. The solvent is poured through a membrane filter which then is examined by microscope to determine the number, size, and type of contaminant particles.

In other cases, hydraulic oil from the part in question is filtered.

These same procedures continue under the new system. However, instead of making his examination via microscope eyepieces, the inspector now does his particle counting by watching the screen of a 17-inch television monitor.

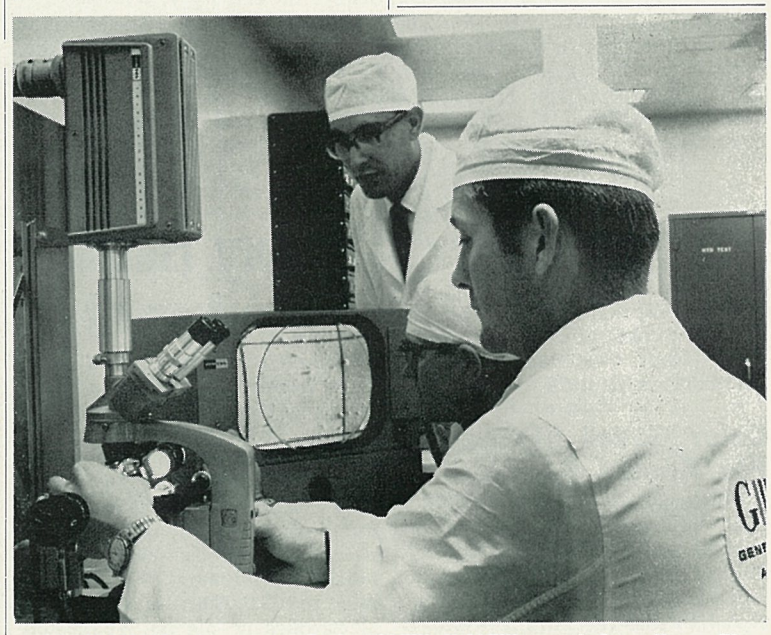
The set-up consists of a binocular microscope, fitted with an adapter to which the small closed circuit TV camera is attached.

The microscope's optics replace the camera's usual lens, and a calibrated plastic grid has been fitted over the monitor screen to permit direct measurement of particles.

"Use of closed circuit television reduces operator eyestrain," explained C. W. Foster, senior quality control engineer charged with development of the system.

"This cuts down possibility of error and increases speed of operation without reducing efficiency."

Technical aspects of the installation were directed by Bill Hetrick of motion pictures and television. It was not necessary to acquire new TV equipment as both camera and monitor were available after use on another production task.



NEW WAY—Inspector R. L. "Willie" Williams, left, adjusts filter under microscope, as Frank Finch and Leonard Showalter check image on TV screen at GD/Astro.

GD/E 'Pop-up' Antenna Concept Designed to Survive Attacks

A new hardened, "pop-up" antenna concept, designed to withstand severe environmental effects of nuclear attacks, has been announced by General Dynamics/Electronics-San Diego.

The technique was developed by GD/E in conjunction with Chu Associates of Boston, Mass., a leading antenna research and development firm.

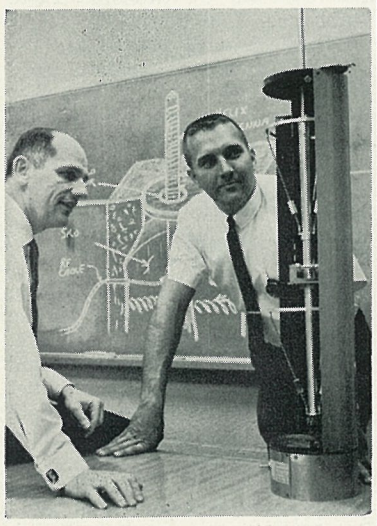
Designed for radar and communications centers, the antennas would be mounted in protective underground silos. In the retracted position, the antennas would be safe from shock and radiation created by nuclear blasts.

According to Dr. Donald Wahl, GD/E manager of research and engineering, the antenna concept is aimed at helping the nation's defense forces to bounce back in the event of nuclear assault.

"With the nation's missile sites buried in silos to withstand attack, it is necessary that radar and communications links receive similar protection," Dr. Wahl said.

For the past two years, a major portion of the advanced engineering effort at GD/E-San Diego has been directed toward development of hardened antenna concepts for HF, UHF, VHF, microwave communications and radar systems.

Robert Durnell, GD/E chief of analysis equipment, directed design development of the new concept as well as other antenna versions, with R. C. Baker, project engineer.



NEW CONCEPT — Robert Durnell, GD/Electronics chief of analysis equipment, and R. C. Baker, project engineer during development of new pop-up antenna design, examine model at GD/E - San Diego.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

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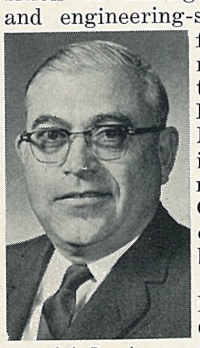
Lockheed Praises Static Empennage

A message to President J. H. Famme of GD/Convair from Lee Poore, Lockheed-Georgia Co. assistant director — manufacturing operations, lauded C-141 production performance upon mating of the first delivered empennage to the fuselage:

"My congratulations to you and your folks. The static empennage was successfully installed April 22 without any problems. Thanks for a good job!"

Brooks Named To GD/E Post

J. L. Brooks assumed the position of manager of research and engineering-sensor products for General Dynamics/Electronics - San Diego, effective May 13, according to an announcement by General Manager John L. Lombardo.



J. L. Brooks

Brooks, who has been with General Dynamics since 1956, succeeds Dr. Donald Wahl. Wahl resigned to accept another position.

A native of Louisiana, Brooks joined GD at Fort Worth seven years ago as design specialist. He transferred to GD/Electronics at San Diego in 1960 as senior electronic project engineer and the next year advanced to manager of airborne radar engineering. In this capacity, he headed development efforts of such important projects as GD/E's terrain following radar, now under Navy testing, and the GD/E bombing radar for the Navy A5C aircraft.

Before joining the Corporation, he headed radar engineering for Emerson Electric Co. at St. Louis, Mo., earlier having been in charge of fire control radar at Navy Electronics Laboratory in San Diego. His more than 20 years in military electronics engineering also included positions with Westinghouse Electric Corp.

His undergraduate studies in both engineering and physics were accomplished at Louisiana Polytechnic Institute, followed by graduate work at UCLA, Louisiana State, and M.I.T.

GD/E Marketing Posts Filled

New appointments announced within the marketing area of General Dynamics / Electronics - San Diego are James H. Gurley, manager of Army requirements, and Sidney M. Chesler, manager of requirements research — Air Force, FAA, NASA, according to J. W. Colvin, manager of plans and programs.



J. H. Gurley

Gurley retired from active duty with the U. S. Army Reserve in 1960 as a lieutenant colonel after 21 years of service. Before joining GD/E, he was with Lockheed Spacecraft in Los Angeles, and prior to that, he was a private consultant to industry on communication and data processing problems.

From 1958 until his retirement

(Continued on Page 2)

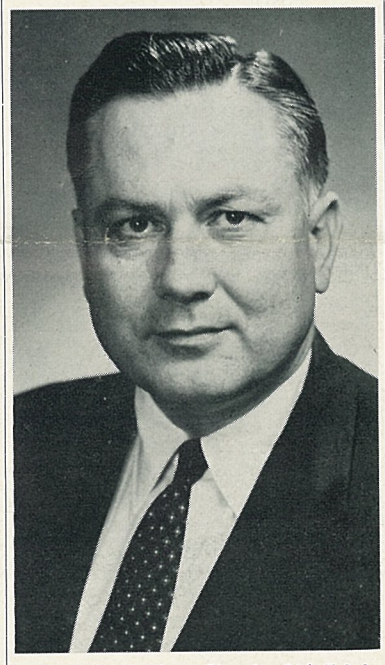
Frick Rejoins GD/Convair as Engineering Vp

Charles W. Frick, new vice president-engineering for General Dynamics/Convair, took over his new responsibilities this week.

His appointment was announced by Convair President J. H. Famme.

Famme predicted that the appointment will strengthen the division's efforts in obtaining new research and development programs and in developing new product lines.

Frick is rejoining GD/Convair after more than a year as National Aeronautics and Space Administration's manager of Project Apollo, the manned lunar spacecraft program. His resignation was accepted "with reluctance" by Dr. Robert W. Gilruth, director of NASA's Manned Spacecraft Center. His "outstanding management and engineering capabilities have been of major importance in organizing the Apollo project and in many successes so far achieved," Dr. Gilruth commented.



RETURNING—Charles W. Frick, former GD/Convair executive, is returning as engineering vice president.

Frick first joined Convair as chief of applied research in February, 1956 and for the next six years directed and coordinated Convair efforts to obtain new study contracts and to develop new products. He also helped plan and furnish technical support for production programs. For 15 years before joining Convair Frick was a senior staff scientist and chief of the supersonic wind tunnel at the Ames Laboratory (now Ames Research Center), National Advisory Committee on Aeronautics (forerunner of NASA), Moffett Field, Calif. While there he was closely associated with missile development.

Born in Kansas City, Mo., Frick earned a Bachelor of Science degree in engineering from Kansas State College, Manhattan, in 1938. In 1940 he received a degree in aeronautical engineering from Stanford University.

Frick has been an associate fellow of the Institute of Aeronautical Sciences and a member of NACA's aerodynamic stability and control subcommittee.

FATIGUE SPECIALIST SPEAKS IN SEATTLE

Clarence Smith, fatigue specialist at GD/Convair, gave a talk, "Preview of a Designer's Fatigue Manual," at the national convention of the Society for Experimental Stress Analysis in Seattle May 10.

ELECTRO DYNAMIC, FACTORY IN RUINS, PUSHES COME-BACK

Phoenix, the mythical bird with miraculous powers of rejuvenation, symbolizes the massive effort being made by Electro Dynamic Division to rebound from the fire which destroyed its Bayonne, N. J., plant last month.

Fire hit the plant shortly after 2 p.m. April 20. Propelled by gusts up to 40 knots, it swept through the eight major and five smaller buildings. Five hours later, when the blaze was declared under control, the only equipment that had not been destroyed or severely damaged consisted of a truck and a station wagon. Fortunately, all employees in the plant at the time had been evacuated. No one was injured.

The oldest of General Dynamics' operating units, Electro Dynamic has been manufacturing electric motors and generator sets for more than 80 years, first in Philadelphia and since 1905 in Bayonne. Over the years, it has developed a reputation for high quality design and production, especially in the field of vibration-free and low-noise level motors for defense and industry. Electro Dynamic products are used extensively on nuclear submarines because they minimize the possibility of detection. They also provide high precision performance for manufacturers in the machine tool, elevator, air conditioning, automotive and other industries.

Even while the ruins were smoldering, division management began planning "Operation Phoenix." According to an Egyptian fable, the Phoenix was a singular bird which lived for 500 years, was consumed by fire, and rose with renewed youth from its own ashes.

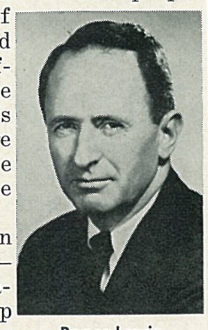
Sunday morning following the fire all department heads gathered at the home of Raymond B. Carey Jr., division president. Roger Lewis, General Dynamics president, had assured him of complete assistance from the Corporation. Every other division either wired or telephoned with offers of equipment, personnel and facilities. Assistance was also

(Continued on Page 3)

'We Can Produce The Best Plane'

Roger Lewis, president of General Dynamics Corporation, appeared before the McClellan Committee in Washington, D. C., last week and presented Dynamics' side of the TFX controversy. Following are excerpts:

"We at General Dynamics understand the vital interest of this committee both in the proper expenditure of public funds and in the most effective possible defense of this nation. I assure you that we share the same interest.



Roger Lewis

"The question of capability — that is, the capability to develop for, and deliver to, the using services an aircraft that meets their highest requirements, within an effective time span, and at a reasonable cost — may best be put in perspective in terms of the history of this company."

(At this point he reviewed the history of General Dynamics divisions.)

"Much more to the point, however, has been the history of the past decade, since General Dynamics itself came into existence.

"Within that short time span, General Dynamics developed and produced not one but five major weapon systems—simultaneously. These combined programs—Atlas intercontinental ballistic missiles, nuclear submarines and nuclear ballistic missile submarines, B-58 bombers, F-102 and F-106 aircraft, Terrier and Tartar air-defense missile systems—represent a major cornerstone of this country's total defense system. No other company in the world can match that record.

"Every one of these represented, through their development and production, enormous advances in technology over anything previously considered within the state of the art. In many aspects they continue to represent unmatched technology.

"The advanced technological and scientific capability that made this sweep possible is still intact. We are quite accustomed to taking quantum, rather than merely incremental, steps. We are accustomed to the unique problems associated with the development of a superior weapon system, in the shortest time period and at minimum cost.

"Grumman Aviation Engineering Corporation has had at least as distinguished a record in its production for the Navy's air requirements.

"I believe there can be no question about the capability of the General Dynamics-Grumman team with its associated major subcontractors, to deliver to the using services an aircraft that will meet their highest requirements, immediately and for the decades following.

"The program for the development and testing of the TFX was established in its present form by the military services after long and careful analysis. Twenty-three aircraft are what the Air Force and the Navy decided they needed to test and develop the design.

"This program, as established, formed the basis around which a long and hard competition was held, one that saw continuing process of design refinement. We have to assume this method of competition was selected from alternates as being the best suited to achieve the objectives of this complex weapon system.

"We won that competition, and have been contractually committed since December, 1962 under a fixed price incentive contract to design and develop the TFX within a very limited time and in accordance with very demanding specifications.

"As of this time we and our principal subcontractors have several thousand people hard at work in order to meet our contractual obligations. Important decisions with respect to design, tooling, and the like have been made. A number of major subcontracts have already been let; many others are in the final stages of selection. Special machinery is being ordered. Substantial progress has already been made in such critical areas as wind tunnel and component testing . . .

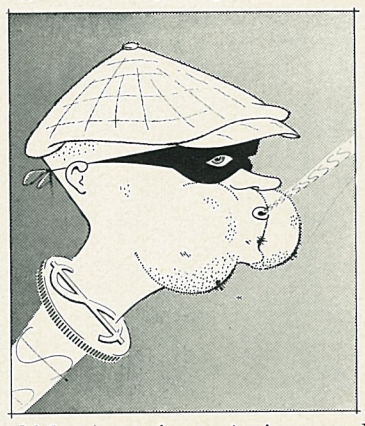
"While the ultimate decision is one for the Department of Defense to make, we believe that to interfere with the momentum of the existing program would be wasteful of the work already accomplished, and would delay significantly the operational date for the TFX.

"I have complete confidence that we can and will deliver to the users a weapon system that will give the United States a tactical air capability second to none. I believe that the design we have chosen represents the best and most straight-forward approach to the TFX requirements and that it can be built for the least total program cost . . ."

Psst! Air Hose Leaks Wasteful; Report Them to Supervision

Beware the thief that steals on the sly, warns Resources Economics, GD/Convair cost monitoring center!

That thief is slipping around the plant in the shape of leaky air hoses. Every leak boosts electricity costs, Resources monitors point out. Spot checks are revealing too many imperfect hoses



which are oozing out air — and wasted electrical power that it takes to run the compressors supplying that air.

Posters are going up in areas which use air hoses for drill motors and other pneumatic tools, riveters, and for cleaning parts. The major portion of work of this type is done in Bldg. 1 fabrication; Bldg. 2, C-141 production; Bldg. 4, Dept. 140; and Bldg. 5, experimental.

The poster reminders urge all factory supervision to survey their own areas closely and send leak control cards to maintenance immediately. Workers discovering leaky hoses should turn them in at once.

Vic Janusz, Resources Economics coordinator, said that at least $10,000 was saved last year in a close watch over air hoses, and that the loss could run to twice that amount if there were no check at all.

GD/E Offers Choice Of Three Trip Sites

GD/Electronics people can pick their target for a June weekend of fun.

They have a choice of three vacation spots, Catalina Island, Lake Arrowhead, Big Bear, at the approximate cost of $25 for transportation and two nights' lodging.

All interested are urged to call GD/E employee services, ext. 2583, or check a sheet at the counter in Bldg. 51, ground floor, for their choice of locations.

See Inside For TFX Statements

Roger Lewis, General Dynamics president, and Frank Davis, General Dynamics/Fort Worth president, testified last week before the McClellan committee in Washington in the TFX hearings.

For a text of their statements, see inside.

Varig Expects to Start Jet 990 Service in June

Varig Airlines' crews are pleased with handling performance of Convair 990As as all three of the line's newest jet craft now are at Brazilian bases before start of service, reports P. H. Selby, GD/Convair flight training supervisor, after a survey of Varig and Viasa of Venezuela operations last month.

Selby particularly was impressed with Varig's training facilities. Ground schools are conducted for flight crews at Porto Alegre, Rio de Janeiro, and Sao Paulo, under direction of Capt. E. Wendorf, in charge of Varig's training program. Instructors are rotated between the three bases so that all crews receive the same material simultaneously.

"Varig's training section is highly satisfied with the training materials prepared by GD/Convair," said Selby. "Revisions for the 990A version arrived on the third craft April 27 to bring the material completely up to date. They have a 990 simulator on order for instrument training."

Varig hopes to have 16 pilots fully checked out by the first of June when passenger runs start between the South American country and Los Angeles.

W. D. Carrier, pilot, and C. J. Falkenthal, flight engineer, both of GD/Convair, are assisting with pilot training and have checked out Capt. O. Silveira of Varig as an instructor/pilot to assist in training others.

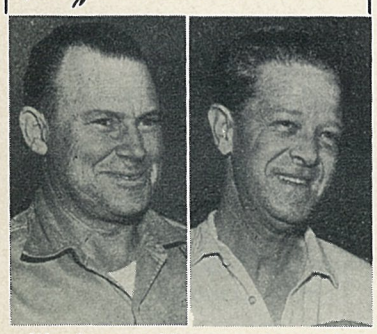
A. P. Wilson, GD/Convair pilot, and Ludy Knudsen, flight engineer, are assigned to route checks and proving runs during the next couple of months.

At Caracas, Venezuela, Selby heard pleasant comments on Convair 880-Ms which Viasa has been flying since summer of 1961. Third 880-M went to the Venezuelan line in late April.

Remarks volunteered by operations and maintenance people showed they think the 880-M "a wonderful plane," easy to maintain and well designed operationally. Public acceptance has been excellent, Viasa officials report.

Viasa's training specialists now are checking out the 14 pilots who recently took GD/Convair's flight production ground school course at San Diego. Larry Brandvig, GD/Convair pilot, is at Caracas to assist in transition training preparatory to putting the latest Convair jet craft into passenger operation.

Log Book Entries



Wearing new 25-year service emblems are GD/Convair men, Oran A. Correll, Dept. 141, left, and Edgar L. Wallin, Dept. 171.

Service Emblems

CONVAIR

Service emblems due during the period May 1 through May 15.

Twenty-five-year: Dept. 101, S. R. Hickok; Dept. 171, E. L. Wallin.

Twenty-year: Dept. 5-0, W. B. Moyer; Dept. 6, E. T. Hansard, R. G. McGeary, E. D. Shannon, A. L. Willson; Dept. 16-1, Virginia S. Reed; Dept. 48-10, M. H. Parrish; Dept. 140, A. C. Aguirre, Arnold Hernandez, L. A. Onneland; Dept. 171, J. F. Anderson, S. L. Cushman, B. R. Kaiser.

Fifteen-year: Dept. 6, G. C. Minton; Dept. 14-4, C. E. Mabry, P. N. Martineau; Dept. 16-1, Golda C. Houk; Dept. 131, Clark Printz; Dept. 140, J. V. Lozano.

Ten-year: Dept. 6-2, H. H. Langer.

GD/ELECTRONICS

Ten-year: Dept. 71-00, L. P. Bray, G. P. Docherty; Dept. 72-00, J. H. Oneal, R. W. Thomas.

Retirements

CONVAIR

ANDERSON—James N., Dept. 148. Seniority date July 10, 1952, retirement effective Jan. 31, 1963.

COLBERT—Leonard, Dept. 46. Seniority date May 23, 1951, retirement effective Feb. 11, 1963.

DANNER—Harry R., Dept. 171. Seniority date Jan. 11, 1951, retirement effective Dec. 7, 1962.

DEY—Everett M., Dept. 292-1. Seniority date April 4, 1957, retirement effective Feb. 15, 1963.

GARDNER—Kenneth L., Dept. 25-1. Seniority date Nov. 11, 1940, retirement effective Feb. 28, 1963.

GEROCK—John S. Jr., Dept. 215. Seniority date Jan. 28, 1953, retirement effective Feb. 28, 1963.

MOORE—Mae K., Dept. 129-0. Seniority date Aug. 11, 1947, retirement effective April 17, 1963.

RANEY—John L., Dept. 21-3. Seniority date Nov. 16, 1951, retirement effective April 30, 1963.

RENTFRO—Charles M., Dept. 102. Seniority date Aug. 14, 1953, retirement effective Feb. 26, 1963.

WELBURN—Grace D., Dept. 171. Seniority date Nov. 4, 1947, retirement effective April 30, 1963.

WELCH—Eddie I., Dept. 148. Seniority date Sept. 18, 1950, retirement effective Feb. 28, 1963.

Lost & Found

CONVAIR

LOST—Convair 30-year service emblem, approximately April 26, in GD/Convair Plant 1. Contact David Wilkinson, Dept. 140, ext. 2605.

Awards

CONVAIR

Employee Suggestions approved for week ending May 3.

Dept. 48, R. J. Harris, $10.

Dept. 128, E. E. Hatz, $10.

Dept. 131, K. R. Abbott, $22; K. R. Abbott and W. E. Ritter (joint award), $5 each.

Dept. 171, G. A. Hasti, $10; G. A. Hasti and G. L. Scheibel Jr. (joint award), $16 each.

Cost Improvement Proposal for same period.

Dept. 131, A. H. Kimble.

Births

CONVAIR

READING—Daughter, Susan Marie, 8 lbs., 3½ oz., born April 22 to Mr. and Mrs. E. E. Reading, Dept. 6.

Personals

CONVAIR

Many thanks to all our friends at GD/Convair and GD/Astro for your kindness and prayers upon the death of my wife.

"Tex" Dyches and Biff
Birmingham, Ala.

HYGIENIST RECEIVES UCLA FELLOWSHIP

I. L. Beauchamp, industrial hygienist at GD/Convair, has received a doctoral fellowship to UCLA beginning this summer.

Under the fellowship, sponsored by Lockheed Aircraft Corp. and the National Institute of Health, Beauchamp will work under the department of radiology at the UCLA Medical Center in the field of medical physics toward a doctorate in radiology. Funds for full-time scholastic study and research extend over a three-year period.

He joined GD/Convair's safety department in 1956, transferring two years later to the medical department. He has acted as industrial hygienist and radiological safety officer for the division the last five years.





BRAZILIAN WELCOME—Second Convair 990A to join Varig Airlines' fleet received royal welcome as it landed in Porto Alegre in mid-April. Standing at far left in top photo is W. D. Carrier of GD/Convair, captain of first 990A flight crew. Next to him in uniform is Capt. Murilo Alvares, one of pilots on second plane. In photo below, G. A. Covington of GD/Convair (far right) snaps shot of Ludy Knudsen and C. J. Falkenthal, GD/Convair flight engineers.

Field Service Reps Pave Way For Arrival of Garuda Planes

Four General Dynamics/Convair field service representatives leave tomorrow on first leg of an air journey that will take them to the widespread island republic of Indonesia to pave the way for arrival of Garuda Airways' first Convair 990A jet transport.

Don Maxion heads the group of Vic Korski, Dave Weitzmann, Phil Smith who will set up maintenance ground school for Garuda training personnel. Initial arrangements were organized by R. K. Hall, commercial field service supervisor, during a recent trip to Djakarta, Garuda's main base.

First course of two scheduled six-week programs will start June 3. Management will receive separate orientation courses. Later, two weeks will be devoted to on-the-job training and the GD/Convair reps will swing the circle around Garuda's Southeast Asian routes to give practical training to ground crews who will be doing the actual servicing of 990As for turnarounds.

Maintenance instructors, supervisors, specialists will be drawn from bases at Bangkok, Manila, Hong Kong, Tokyo, Singapore to attend the GD/Convair-directed maintenance instruction at Djakarta.

Bulk of the study material has already gone by ship. A second shipment left last week by air freight, and the traveling quartet will carry with them only necessary material to get the program under way during the first few days in case of delay in transport. They will make a stopover at Hong Kong en route to coordinate shipment of training materials.

Maxion will return to GD/Convair in three months with the other three reps remaining in support of 990As for at least a year. Weitzmann, senior rep, Korski and Smith, have all had experience in the Far East during transition of Convair 880-Ms into operation with Civil Air Transport, Japan Air Lines, Cathay Pacific Airways.

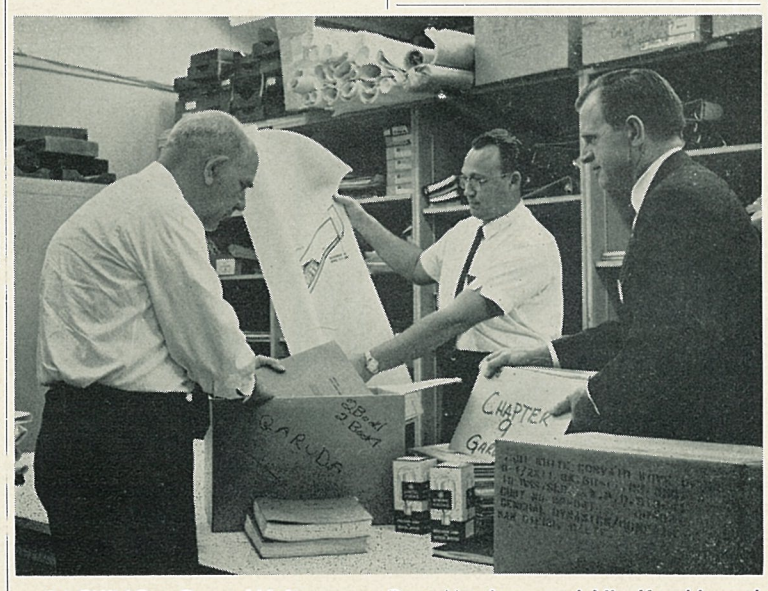
Late in July Garuda flight and maintenance crews will be at San Diego for in-plant training. Two five-week ground school classes will be conducted for flight crews by production flight and a six-week course for maintenance personnel before the first 990A is delivered in late summer.

Plant Ball Players Forming 'Slow Pitch'

Plant ball players have until tomorrow (May 16) to form their teams for the annual "slow pitch" softball league.

Seven, two from GD/E and five from GD/Convair, already have signed, said Pete Beyrer of CRA office. One more will even up the pairing-off when the schedule is compiled.

League play will start the first week in June with ball field to be announced.



PACKING—Dave Weitzmann, Don Maxion, and Vic Korski pack up training materials for Garuda Airways before departure for Indonesia to set up maintenance training program.

Dance Changed To El Cortez

Location of the Management Club's annual spring dance has been changed to the Century Room of El Cortez Hotel's new convention center to accommodate the large crowd of GD/Convair and GD/Electronics people planning to attend.

Ticket sales had far exceeded expectations with several days to go before dance date, this Saturday, May 18. Tickets, at $2.50 per couple, may still be purchased at GD/Convair and GD/E outlets.

Sponsoring material and production services department, with Art Ratz, general chairman, promises an entertaining evening for all members and guests.

Walt Boronda's orchestra will play for dancing; a May Festival queen will be crowned; and prizes given.

GD/E Marketing Posts Filled

(Continued from Page 1)

from the Army, he was assistant chief of automatic data processing at Fort Huachuca, Ariz. While assigned to the U.S. Army Signal School at Fort Monmouth, N. J., he assisted in preparing the first data processing courses for the Signal Corps.

Gurley attended Holy Cross College, Monmouth College, the University of Arizona.

Chesler, a native of Chicago, Ill., recently retired as a lieutenant colonel after 22 years as a reserve officer on active duty with the U. S. Air Force. He holds a bachelor of philosophy degree from the University of Chicago.



S. M. Chesler

During his military service he established and conducted a school for aircraft controllers at the 4750th Training Squadron, Yuma Air Base, Ariz., and was responsible for inclusion of all aircraft control and warning functions into the SAGE system at sector and subsector levels while serving as Branch and Division Chief with the 4620th Air Defense Wing.

His last assignment was staff officer representing Air Defense Command in the planning and development plans of satellite defensive systems at the Space Systems Division, Aerospace Defense Systems Office, with headquarters at Los Angeles.

$3,300 Earmarked As Charity Gifts

GD/Convair employees donated $3,300 to local charitable groups through their Con-Trib-Club Committee approval at the April 23 meeting.

American Cancer Society, San Diego County Branch, received $3,000 for the 1963 fund-raising campaign and the Salvation Army, $300 for its campership program.

At the previous Con-Trib-Club Committee session donations were approved for Children's Dental Health of San Diego, $500; Girl Scout Council of San Diego County, $500; Jewish Community Center, $125; Sunnyside Guild, Inc., $750.

Bill Zimmerman's Photos on Display

Two black and white photographs taken by D. L. (Bill) Zimmerman of GD/Electronics program administration were chosen for display at the first annual art department exhibit held by Grossmont Junior College the first of this month.

Zimmerman, who with his wife, has been studying photography under Clarence Jasmagy at the school, has been interested in this form of art for several years.

General Dynamics NEWS

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Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320. P.O. Box 1950, San Diego 12, Calif. Telephone 296-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

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CARRY ON!—When fire destroyed Bayonne, N.J., plant of Electro Dynamic Division of General Dynamics, personnel moved into nearby quarters offered by Englander Co., mattress manufacturers. In lower left photo, Walter A. LaPierre, manager of research and development, (right), confers with staff. At lower right, Sam De Nisi of sales telephones customer, assuring that commitments will be met. In lower center, Nick Kaminsky, engineering layout man, achieves degree of privacy by using bedsprings as partition! Water tower (top center), although still standing after fire, was damaged by searing flames.

F-102 FIS Nominated For 5th AF Award

An F-102 Air Force squadron, the 4th Fighter-Interceptor Squadron at Misawa, Japan, has been nominated by the Fifth Air Force for a performance award for the third quarter of fiscal year 1963.

This is the second successive nomination for the 4th FIS, and its third in a year, reports A. C. Shedrick, GD/Convair field service representative.

The 4th FIS was cited for special improvement in training accomplishments, for the high skill of its pilots, and for its outstanding safety records.

990 Sets Another Record For Speed

A Convair 990 set another speed record the latter part of April between San Diego and Chicago. The American Airlines' Astrojet sped cross-country in 2 hours, 41 minutes, 45 seconds, shaving seven minutes from the previous record.

Two General Dynamics men, H. P. Williams, GD/Convair manager of value control, and F. J. Traversi, GD/Astro vice president-administration, were aboard to testify to the speedy flight.

Electro Dynamic, Plant in Ruins, Shows Fighting, Come-Back Spirit

(Continued from Page 1)

offered by Bayonne civic officials and many other sources.

At the Sunday morning meeting, task forces were formed to explore all possible means to get the division functioning as soon as possible. Later in the day, department heads met with staffs to give them specific missions.

At this point, "Operation Phoenix" had no headquarters, but Electro Dynamic's next-door neighbor, The Englander Co. gave the division a home.

A manufacturer of bedding equipment, Englander lost a warehouse in the fire but its main building was intact. A storage area was cleared for temporary offices, and additional space was obtained in downtown Bayonne.

"Englander has been wonderful to us," a division executive commented. "They gave us a big helping hand when we needed it most."

Leonard R. Allen, manufacturing services manager, set about equipping offices. Folding tables were converted to desks. Telephones were installed and a temporary switchboard was set up in time to receive calls at the opening of business on Monday. International Business Machines Corporation loaned typewriters and dictating machines to supplement similar equipment from the Corporate office. Duplicating equipment was supplied by American Photocopy Co. Calculators were rented. The caterer who had run the division cafeteria made arrangements to feed employees with a mobile unit. Stationery and office supplies were purchased.

As early as possible on Monday, William D. McCarthy, plant superintendant and industrial relations manager, met with employees to fill them in on the situation and to tell them about measures being taken to assist them in the weeks ahead. McCarthy worked closely with officials of the union, Local 1035 of the United Automobile Workers, who had offered assistance immediately.

The major problem confronting the division was reconstructing records lost in the fire, especially those of the engineering and sales departments. Calls went out to customers and suppliers who cooperated by duplicating their records and sending copies.

Pattern makers who had bid on jobs over the last ten years sent in their copies of engineering drawings. Some 10,000 water-soaked drawings were eventually retrieved from the ruins and hung up around the office to dry.

New drawing boards and drafting equipment were delivered within two days.

Members of the sales force fanned out across the country or contacted customers by telephone to keep them advised of progress. Salesmen worked with customers to establish realistic priorities so that the most urgent orders could be filled readily when production could be resumed.

All possible methods of production, including sub-contracting of some work to other manufacturers, are being weighed.

The purchasing department canvassed suppliers to determine how quickly new equipment could be obtained once operational plans were firmed up.

The comptroller's department and insurance specialists in the Corporate office assembled comprehensive data needed to expedite insurance claims.

Although "Operation Phoenix" is a round-the-clock, all-hands evolution that continues through weekends, morale is high. Harris Shapiro, vice president-engineering, said, "I'm astonished at what has been accomplished. I've always taken pride in this operation but never like this. Our people have been fantastic."

A veteran draftsman, surveying the twisted confusion of steel girders and rubble that had been the plant said wistfully, "It's hard to believe — you look out the window and see that." But his mood was a transient one and in a matter of moments he was commenting in words that sum up the spirit behind "Operation Phoenix," "We'll make it."

President Carey emphasized that all commitments to customers would be met and that deliveries on orders open at the time of the fire would be made as quickly as possible.



COMPUTER GATHERING—John L. Lombardo, general manager of GD/Electronics-SD (far left), welcomes Robert E. Moore of Corporate staff, coordinator of GD Computer Panel meeting in San Diego. Others, from left, are A. E. Andress of GD/Astro; J. G. Lewis, GD/Pomona; R. G. Bond, GD/E-SD; L. H. Loehr, Stromberg-Carlson; T. S. Kennedy, Canadair Limited; K. A. Bridgeman, GD/E-Rochester.

Standard Computer Procedures Among Dynamics Divisions Goal

Standardization of all computer documentation within General Dynamics Corporation was approved unanimously by some 50 delegates from nine Corporate divisions at the General Dynamics Computer Panel last month.

Panel sessions were hosted by GD/Electronics - San Diego, with Thomas Kennedy of Canadair Limited as general chairman.

G. O. Withem of GD/Convair, member of the panel's outgoing executive committee, drew attention to the necessity for a satisfactory and workable computer documentation procedure for all General Dynamics divisions so that information can be interchangeable at all times.

In addition to manpower savings in reducing duplication of programming efforts, standard documentation would greatly ease the task of transmitting data on programs within the company, he explained.

Implementation of the adopted resolution will be the responsibility of the Corporate systems department under Robert E. Moore, GD manager of systems and procedures and data processing.

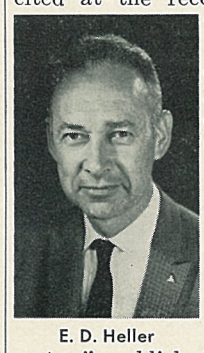
Other business saw the election of a new executive committee for a one-year term. Robert Carson and Robert McWhorter of GD/Fort Worth form the business and scientific team representing the Western divisions. Ralph Fragola and William Peirce of Electric Boat were chosen as the Eastern team.

They replace the first executive committee of Withem; Dov Abramis, GD/Pomona; Kennedy of Canadair; and A. J. Van Woerkom of Electric Boat.

Panel meetings to exchange information on computer operations and developments are held once each year with the next hosted by Electric Boat in Groton, Conn.

HELLER HONORED FOR VALUE PAPER

E. D. Heller, manager of value control at GD/Astronautics, was cited at the recent annual convention of the Society of American Value Engineers for contributing the outstanding article of the year on value engineering.

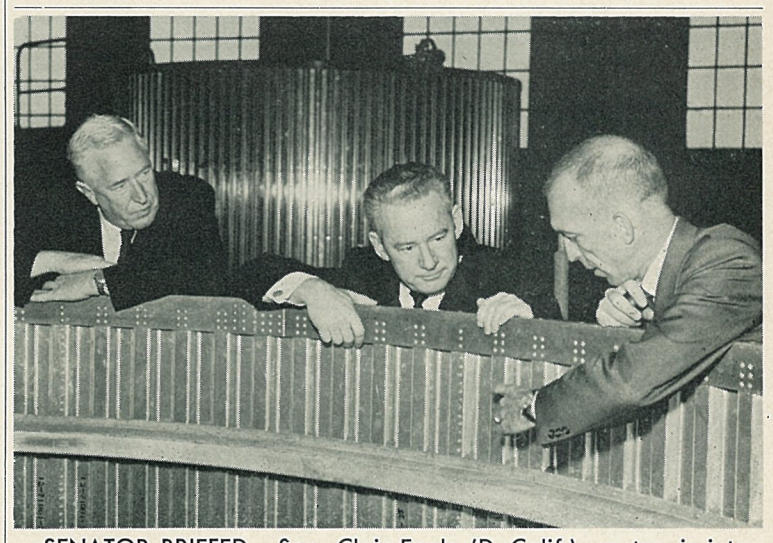


E. D. Heller

Heller received a special plaque for his paper, "Cost as a Design Perimeter," published in the SAVE Journal for September, 1962.

Both Heller and M. L. Hicks, GD/Fort Worth vice president-legal and procurement, spoke during the two-day meet, April 25-26, in New York.

Other General Dynamics delegates included F. J. Traversi of GD/Astronautics; H. P. Williams, GD/Convair; C. W. Doyle and Rand Creasy, GD/Fort Worth; C. C. Frankenberger and E. H. Conklin, GD/Pomona; and K. Mikelson and R. F. Stapells of Canadair Limited.



SENATOR BRIEFED—Sen. Clair Engle (D.-Calif.), center, is interested in corrugated aluminum construction of Little Joe II launch vehicle described by J. B. Hurt, GD/Convair Little Joe II program manager, during April 26 visit. Host during tour of plant was D. C. Wilkens Jr., director of industrial relations (left).

'We Can Produce The Best Plane'

(Following is the text of a statement by Roger Lewis, president of General Dynamics Corporation, to the permanent subcommittee on Government Operations, U.S. Senate, made last week in Washington, D.C.)

"Mr. Chairman:

"My name is Roger Lewis. I am President and Chief Executive Officer of General Dynamics Corporation. I was elected to that post in February, 1962, some time after the initiation of the competition which led to the award of the RDT&E letter contract for the F-111 in November 1962.

"I have been associated directly with the aircraft industry for almost 30 years, starting at Lockheed Aircraft Corp. in 1934. Since then I have been active in many phases of production, material control, purchasing, sales and management on programs representing both military and civil aviation.

"To answer your questions in the technical area, Mr. Frank Davis, president of our Fort Worth Division, where the F-111 is currently under active development, is also here.

"Mr. Davis, a former Marine Corps pilot, has been part of the aircraft production operations of this company for 23 years. In 1945, as chief of aerodynamics and flight test at what was then known as Vultee Field Division of Convair, he was the first pilot to fly a turboprop powered aircraft, the experimental XP-81 fighter. In 1947 he was named chief design engineer at Convair's San Diego Division, where he was closely identified with the development of the XF-92A, the world's first delta wing aircraft, and the AF F-102 supersonic interceptor, among other projects. Since 1954, Mr. Davis has been with our Fort Worth Division, first as chief engineer and since 1959 as manager and president of that division. During this period, Mr. Davis has been a key figure in the design, development and production of the AF B-58 bomber, which is still the free-world's only supersonic, four-engine bomber.

"As an accommodation to the committee, I am pleased to be able to say that Messrs. E. Clinton Towl, George Titterton, and Corwin Meyer of the Grumman Aircraft Engineering Corporation are present.

"Grumman Aircraft is our chief subcontractor on the F-111, and our proposal was developed in conjunction with that company. Grumman Aircraft, as you gentlemen are aware, is not only a leading company in meeting U.S. Navy air requirements, particularly for carrier-based planes, but has also built and flown the only variable sweep wing aircraft designed for operational use.

"Mr. Towl, president and chief executive of Grumman since 1960, was one of its founders in 1930. Mr. Titterton, senior vice president in charge of program development, has been with Grumman since 1936, and in the aviation industry since 1926. During World War II, he was chief of production and engineering for that company, and has since directed manufacturing and production of all Grumman's major programs. Mr. Meyer, with Grumman since 1942, is currently director of aircraft development. He was chief test pilot during flight test of the XF-10-F variable sweep wing aircraft in 1952-53. During the year-long testing that successfully demonstrated variable sweep wing technology, Mr. Meyer piloted the plane on 232 flights.

"I appreciate the opportunity the committee has given me to be here today. We at General Dynamics understand the vital interest of this committee both in the proper expenditure of public funds and in the most effective possible defense of this nation. I assure you that we share that interest.

"As you may imagine, I have followed the published testimony over the previous two months of hearings with great interest. Based on this published material, it seems to me that the emphasis of the testimony has been largely in the areas of capability, cost, and competition. I believe clarification of some of the implications of previous testimony might be useful to this committee.

"The question of capability—that is, the capability to develop for, and deliver to, the using services an aircraft that meets their highest requirements, within an effective time span, and at a reasonable cost—may best be put in perspective in terms of the history of this company.

"General Dynamics is made up of 11 operating divisions in the United States and one major Canadian subsidiary. Of the 11 U.S. divisions, six operate largely in what is generally considered the 'defense' area.

"General Dynamics Corporation came into being under that name only in 1952. However, some of its key components go back more than 60 years.

"One component, Electric Boat Division, the direct predecessor of General Dynamics, delivered to the U.S. Navy its first submarine in 1900. During World War I, Electric Boat supervised the construction of, and delivered to the Navy, 173 submarines. During World War II, we delivered 97 submarines and 399 patrol torpedo boats. Since then we have built the world's first nuclear submarine, and have been the lead yard and prototype builder for most of the Navy's nuclear undersea fleet.

"Another early component, Consolidated Vultee Corporation, became the Convair Division of General Dynamics, and has since grown into four autonomous divisions: Astronautics, Convair, Fort Worth, and Pomona. This component has been producing aircraft, military and commercial, since 1908, beginning originally as the Gallaudet Aircraft Corporation. Convair, in the 30 years between 1923 and 1953, when it became part of General Dynamics, produced no less than 42 different models of aircraft for the Army, the Navy, the Air Force, and commercial carrier lines. These have included sea planes, patrol planes, bombers, pursuit, attack and interceptor aircraft, as well as commercial transports. During World War II, Convair delivered more than 350 million pounds of airframe, approximately 13 per cent of the total national output, or a total of more than 33,000 military aircraft, plus the equivalent of 5,000 more in spare parts. These included the PBY series of flying boats, B-24 Liberator bombers, C-87 Liberator express transport, Valiant trainers and Sentinel liaison planes.

"Much more to the point, however, has been the history of the past decade, since General Dynamics itself came into existence.

"Within that short time span General Dynamics developed and produced not one but five major weapon systems—simultaneously. These combined programs—Atlas intercontinental ballistic missiles, nuclear submarines and nuclear ballistic missile submarines. B-58 bombers, F-102 and F-106 aircraft, Terrier and Tartar air-defense missile systems—represent a major cornerstone of this country's total defense system. No other company in the world can match that record.

"Today, the F-102 and the F-106 are the backbone of Air Defense Command. The Atlas was the first—and for a considerable time, the only—operational intercontinental missile available to back this country's deterrent stance. As a booster, it has launched all of this country's manned orbital space flights. The B-58 remains the Strategic Air Command's, and the free-world's only supersonic bomber.

"General Dynamics' Electric Boat Division continues as the world's leading design yard for submarines, and has delivered some 40 per cent of our nuclear undersea fleet. Terrier and Tartar missiles represent important elements of the Navy's air defense.

"Every one of these represented, through their development and production, enormous advances in technology over anything previously considered within the state of the art. In many aspects they continue to represent unmatched technology.

"The advanced technological and scientific capability that made this sweep possible is still intact. We are quite accustomed to taking quantum, rather than merely incremental, steps. We are accustomed to the unique problems associated with the development of a superior weapon system, in the shortest time period and at minimum cost.

"Grumman Aviation Engineering Corporation has had at least as distinguished a record in its production for the Navy's air requirements. Since 1930, Grumman has produced over 25,000 aircraft of which 23,500 were carrier-based fighter or attack aircraft . . .

"Among a number of Grumman firsts for the Navy were: retractable landing gear, in 1931; the folding wing, in 1937; the swept-wing, in 1951; the area-rule fuselage, and the carrier-based supersonic F11-F-1 fighter in 1954, and the F11-F-1F carrier-based Mach 2 fighter-bomber in 1956.

"I believe there can be no question about the capability of the General Dynamics-Grumman team with its associated major subcontractors, to deliver to the using services an aircraft that will meet their highest requirements, immediately and for the decades following.

"As to the question of competition:

"Throughout our history we have considered ourselves as a weapon system developer, responsive to the requirements of the services. We have gone through periods of national emergency, when thousands of men worked around the clock; we have had lean years when it was a struggle to keep our capability together. Competition has been our way of life. Sometimes we have won, sometimes we have lost. When we have lost, even if we felt strongly that we had presented the better proposal, we analyzed our shortcomings and determined to be better prepared for the next competition.

"We believe in competition. You gentlemen will recall that the year-long competition leading to the award of this contract, first between six and later between two contractors, has been considered the most severe ever applied to any potential weapon system. It has not been easy for us, nor I suspect, for any of our rivals or for the evaluation teams of the services and the Department of Defense. Yet we have felt that this competition, in defining, and refining, the requirements of a weapon system to a more advanced point than had ever before been reached prior to an actual award, was in the best interest of the nation.

"We believe that, as a result of the long process of refinement, the Department of Defense objective of a common airplane for two services has been achieved. Both final proposals represented aircraft far better than could have been attained with less exhaustive procedures.

"This leads to the question of now re-opening the competition on the basis of in-flight comparison of two or four prototypes. Some weeks ago, Mr. Chairman, you advised us that our rival had offered such a proposal. You asked us to submit a parallel estimate of costs. We could only conclude from the request to both companies that the committee has in mind a new competition.

"We have been most anxious to cooperate with the subcommittee and its staff. From the very beginning of the inquiry some months ago, we have responded to all requests levied upon us. In general, the information we were called upon to furnish consisted of available data bearing on the TFX competition. The information now requested would have to be developed.

"The program for the development and testing of the TFX was established in its present form by the military services after long and careful analysis. Twenty-three aircraft are what the Air Force and the Navy decided they needed to test and develop the design.

"This program, as established, formed the basis around which a long and hard competition was held, one that saw continuing process of design refinement. We have to assume this method of competition was selected from alternates as being the best suited to achieve the objectives of this complex weapon system.

"We won that competition, and have been contractually committed since December, 1962 under a fixed price incentive contract to design and develop the TFX within a very limited time and in accordance with very demanding specifications.

"As of this time we and our principal subcontractors have several thousand people hard at work in order to meet our contractual obligations. Important decisions with respect to design, tooling, and the like have been made. A number of major subcontracts have already been let; many others are in the final stages of selection. Special machinery is being ordered. Substantial progress has already been made in such critical areas as wind tunnel and component testing. We expect to start ground tests in months . . .

"While the ultimate decision is one for the Department of Defense to make, we believe that to interfere with the momentum of the existing program would be wasteful of the work already accomplished, and would delay significantly the operational date for the TFX.

"If we have misunderstood the intent of the inquiry, and the committee desires only an order of magnitude figure as a basis of discussion, you already have such a submission. Its validity could be quite easily evaluated for the committee by appropriate independent technical experts.

"One final point—on the question of cost estimates:

"One witness before this committee recently provided a full summary of the cost estimating procedures which are essentially standard throughout the aerospace industry—although the nomenclature may vary somewhat from company to company. As you know, our costing procedures, which I assure you were thorough, have been documented at length to your staff by our representatives.

"However, because both General Dynamics and Grumman have recently built both supersonic and subsonic manned aircraft, we have been able to check and validate our estimates against actual program experience.

"General Dynamics has more experience than any other contractor in the production of supersonic aircraft, through the B-58, the F-102, and the F-106. Dynamics-built aircraft have already accumulated more than 50,000 hours of supersonic flight time. We additionally have extensive experience in the development and production of supersonic missiles, through our Terrier and Tartar program, and of hypersonic vehicles through our Atlas and Centaur programs.

"As our associate and major subcontractor, Grumman Aircraft Engineering Corp. adds a wealth of experience with naval weapon systems, such as the supersonic F11F fighter and the A2F all weather attack system.

"Our combined cost proposals were based on knowledge of the complexities of the supersonic flight for both bomber and fighter configurations, land-based and carrier-based, as well as of the problems inherent in the highly advanced technology called for in the F-111.

"There is sometimes a temptation in a hard-fought competition to shave the price on the research portion of a program, where the potential exists for sizable production orders later. We have not done this. Our price is a close one, but it includes a modest profit.

"This will be a fixed price incentive contract. If, as we hope, through careful management we can produce this airplane for even less than the amount we have contracted, the government will receive 90 per cent of such savings, and at the same time be protected against over-runs.

"Since the award of the contract last November we, our associate contractors and our subcontractors, have been working full time on the development of this aircraft. We have had full cooperation from all segments of government and industry involved in this project. The morale of all the people involved in this project is extremely high.

"I have complete confidence that we can and will deliver to the users a weapon system that will give the United States a tactical air capability second to none. I believe that the design we have chosen represents the best and most straight-forward approach to the TFX requirements and that it can be built for the least total program cost . . ."

"Some of the testimony before this committee has created erroneous impressions about our proposal. Certain of these points should be clarified and others brought out. Mr. Frank Davis, President of our Fort Worth Division, is responsible for the development of the F-111 and has a statement to make."

Dynamics' Design Advantages Given

(Following is the text of a statement by Frank W. Davis, president of General Dynamics/Fort Worth, to the permanent subcommittee on Government Operation, U.S. Senate, made last week in Washington, D.C. The word "deletion" has been used to indicate security excerpts.)

"Mr. Chairman:

"I am Frank W. Davis. I have been Manager of the Fort Worth Division of General Dynamics Corporation since 1959, and President since 1961. Prior to that I was Chief Engineer.

"I am a graduate of California Institute of Technology, and have been honored with a degree of Doctor of Science from West Virginia University for contributions in the field of aeronautics.

"I received my wings as a Naval aviator at the Naval Air Station in Pensacola, Florida, in 1937, and served in fighter and dive bomber squadrons of the U. S. Marine Corps.

"I joined one of the predecessor companies of General Dynamics in 1940 as Engineering Test Pilot. I have flown or flight-tested some 75 different types and models of aircraft, including fighters, dive bombers and attack bombers.

"During my 23 years with General Dynamics I have had, at one time or another, engineering design responsibilities for fighters, missiles, bombers, seaplanes and commercial aircraft. I still fly as time and circumstances permit, and have flown a TB-58 at Mach 2 speed at altitude and at Mach (deletion) on the deck.

"My most recent and relevant experience for the TFX is in connection with the F-102 and the B-58, both supersonic manned aircraft; the first an all-weather fighter, the second a bomber.

"My design responsibilities have included many 'firsts.' At

(Continued on Page 5)

(Continued from Page 4)

some stage in their development I have been in responsible charge of design and/or test of the following:

"—first intercontinental ballistic missile,
"—first turboprop fighter,
"—first vertical take-off fighter,
"—first delta-wing fighter,
"—first supersonic bomber.

"For General Dynamics I am now charged with total responsibility for TFX.

"I do not hesitate in the least to tell you that the General Dynamics TFX is the superior weapon system, will cost less to produce in the planned quantities, and better meets the stated requirements of the Secretary of Defense for a bi-service aircraft. The testimony to date reflects that in the final evaluation, the Source Selection Board had before it weighted scores which in the aggregate favored General Dynamics by 8.2 points, adjusted down to .3 of a point. In my judgment, the General Dynamics TFX has a greater superiority than is reflected in these official scores in its favor.

"First, let's talk about the airplane itself.

BASIC DESIGN MISSION

"The basic USAF mission of the TFX is the Tactical Air Command (TAC) (deletion) mission. 6/7 of the airplanes are planned for this purpose. In this mission, the airplane takes off and flies (deletion) until it reaches the target and drops its bombs. It then (deletion) returns home. This is a contractual requirement and is identified in the statement of work as the 'Basic Design Mission.' This is the mission that was most difficult for the airplane designers to meet. The General Dynamics airplane, as evaluated by the Air Force, offers (deletion) more range than the Boeing airplane does, in this, the basic design mission.

"As shown in earlier testimony in terms of a few miles difference in dash, the true significance of this element of performance has been obscured. Here is why. The enemy's defense is assumed by the military to be so many miles deep. You need the (deletion) dash to get through. This is where you may get shot down. You would like to be able to operate from a base well back from the target. If you cannot because of lack of range on this mission, you will have to abandon the target, move closer to the target, or be prepared to accept more losses because of your vulnerability at lower speeds in the enemy's defended area.

"How much further away does the Air Force say the General Dynamics airplane may be based? (Deletion) further, a direct result of admitted superior (deletion) performance. Superior (deletion) design results in lower fuel consumption during the dash. The fuel saved is used to extend the (deletion) mission. This advantage becomes greater if the enemy decides to increase his depth of defense.

"If you utilize actual bases and actual targets in Europe or Asia to demonstrate the value of this additional range, the superiority of the General Dynamics TFX is clearly revealed. It covers 19% more targets in Europe and 14.5% more in Asia. This is a direct measure of wartime combat effectiveness. That is what you and I are paying for. Thus, the General Dynamics TFX gives you more combat effectiveness per dollar.

"This is the basic TAC mission; this is where the airplane and engines work hardest to succeed; this is where General Dynamics concentrated and was found superior; and this is the mission where the most growth potential is needed because it is the enemy who decides how deeply to defend his targets. If he increases his defense by 25%, the General Dynamics range advantage increases from (deletion).

"A basic principle of efficient supersonic aerodynamics is to have the smallest frontal area to minimize wave drag. From the testimony of the evaluation group, it was stated that the General Dynamics design adhered best to this principle. The larger frontal area of the Boeing design would require basic and fundamental redesign to improve. Time and money are required to do this.

"This is the true significance of General Dynamics admitted superiority in the supersonic design of the TFX. This is the guts of the whole design problem for the Air Force airplane. This advantage has been obtained only by the most careful shaping of the fuselage and wing, and by carefully positioning the engine inlets for maximum efficiency.

FERRY RANGE

"The erroneous impression persists that in ferry range capability with external tanks the Boeing airplane exceeds that of General Dynamics by 1,100 miles. The record should be set straight here. Ferry range **without** external tanks is the only specific ferry range requirement in the work statement. General Dynamics meets the range requirement comfortably as evaluated. And as we predicted, ranges in excess of those shown on Exhibit 29 claimed by Boeing are now known to be attainable by our airplane.

"In the time honored manner you can hang additional external fuel tanks on the airplane until a reasonable maximum operational weight is reached. This maximum operational weight is reached long before the physical restraints are reached for installation of external tanks. In other words, the structural strength limits the weight that is carried and consequently the ferry range that can be achieved, not the number and size of tanks that can be physically accommodated. There is more than adequate room available on the General Dynamics F-111 wing to add (deletion) more hard points if desired. As brought out in previous testimony, General Dynamics provided strength in its structure and landing gear to take off with 10,000 pounds more weight than Boeing. When operating to the same structural margins of safety the General Dynamics airplane ferry range with external fuel will substantially exceed that of Boeing. Exhibit 29 should be corrected to reflect this fact.

"In addition, General Dynamics has designed into its airplane the capability of installing the (deletion) longer Navy wing tips on the Air Force airplane which will extend the ferry range by a substantial increment. As an additional bonus the sturdier Navy landing gear is interchangeable with that in the Air Force airplane and can provide added strength for unrestricted operation from rough fields at greater than normal weight.

"As we will discuss later under commonality, General Dynamics designed the basic structure of the wing and fuselage to be identical. The longer wing tips are bolted on the Navy airplane and a different nose is used. The Navy landing gear is stronger and heavier to take carrier landings but is interchangeable with the Air Force gear. The fuselage and attachments for either version of the General Dynamics airplane are strong enough for the greater loads occasioned by carrier landings.

BOMB LOADS

"Bomb load has likewise been portrayed as a significant issue; in reality, it is not. The requirement was for a certain number of external hard points for attaching bomb racks, and a certain bomb load. General Dynamics proposed a practical load well beyond the requirements and consonant with the landing gear strength capability for TFX type operation. You will recall that we provided strength in the Air Force structure and landing gear for 10,000 pounds more weight than did Boeing.

"In practice the machine would be loaded down with whatever external bomb load was desired for a particular situation so long as the strength of the airplane was not pushed too far. It was expected that an experienced technical evaluation team would find no cause to make an issue of the specific typical loadings shown in the proposal document, and indeed they did not.

"The simple fact is that either airplane can greatly exceed bomb load requirements. It is also reasonable to expect that the General Dynamics airplane could be pushed to greater overload because of the greater load carrying capability of the structure and the option exists of putting on the Navy landing gear at any time that it might be desired to further increase the strength for rough field operation at extremely high gross weights as previously mentioned.

"Significantly, Source Selection Board members in recent testimony confirmed that the ferry range figures with external fuel and the ordnance loads shown on the Committee Staff's chart (Exhibit 29) were not developed under similar ground rules and they stated that these items were not evaluated to determine ultimate capability. Since the chart has created the impression that the Boeing design was better, the record should be set straight by correcting Exhibit 29 to show that the General Dynamics TFX could carry 10,000 pounds more load than Boeing.

LANDING DISTANCE, THRUST REVERSERS

"Landing distance has also become an issue. The evaluation shows that either airplane meets the requirement with ample margin. The shorter roll reported for the Boeing airplane is based on the proposed use of a thrust reverser.

"General Dynamics likes the idea of thrust reversers for stopping on the ground—it uses them on its commercial airplanes for that purpose. But in the TFX this is not the whole problem. Satisfactory braking in the air for combat operations is also required. This complicates the thrust reverser development problem and makes them heavier. The thrust reversers for the TFX must be able to stand up in service and operate very reliably even though its parts must frequently withstand the severe vibration and 3,000° temperature of afterburner operation not required in transport applications. In addition, it must not warp or bend enough to allow even a small degradation in nozzle efficiency, for it is intimately associated with the already complex and sensitive nozzle system of the TF 30 engine. A 3% degradation in nozzle efficiency, altogether possible with a poor thrust reverser installation, would sacrifice 25% of the required (deletion) dash distance. I doubt that TAC would accept that.

"Mr. Jordan of Pratt & Whitney discussed the problems of developing a thrust reverser for the TF 30 engine at length. We have also discussed the problem with the Rohr Corporation, builders of thrust reversers. We do not believe a satisfactory thrust reverser will be developed in time to meet the needs of the early TFX airplanes.

"General Dynamics did not want to be caught off schedule on the important air braking requirement so it proposed the tried and true dive brake system and used wheel brakes—the simplest system for stopping on the ground. As evaluated, this provides a landing distance you can overshoot by ⅛ without exceeding the requirement. If and when a satisfactory thrust reverser is developed, and we are anxious to aid in such development, the General Dynamics engine installation design and airplane balance will allow for its installation.

REACTION TIME

"The claim that the General Dynamics airplane has a reaction time twice that for Boeing is not supportable. The reaction time for the TFX, as stated in the requirements, is counted from a standby alert—not a cockpit alert. Standby alert means the crew is in the ready shack. Typical TAC operations were studied; the time claimed for Boeing is equal to that normally required for TAC crews to run from the ready shack to the airplane plus the time normally required to taxi from the parking area to the end of the runway. This would leave no time for engine start and cockpit check. Therefore, the airplane could not react in the time shown. Exhibit 29 should be revised to show reaction time on a comparable basis consistent with the TFX specification.

LOITER (PRIMARY NAVY MISSION)

"Loiter on station is the primary mission for the Navy. Two types of loiter mission are considered. The first of these is to loiter a short distance out from the ship for several hours. Both airplanes were evaluated as meeting this requirement. The second mission, which was assumed to take the same amount of fuel, requires shorter loiter time farther out from the ship. General Dynamics was evaluated as deficient on this mission. There is apparently an error in the evaluators' calculations which would have removed part of the deficiency but that is not important. What is important is that there is plenty of room left in the fuel tanks to add more fuel because General Dynamics has made its Navy wing a fuel tank, the same as its Air Force wing. It is available for added fuel to meet the stated loiter requirements or more. With the additional fuel, General Dynamics meets the requirements comfortably. The testimony indicates no requirements for redesign. Thus, there is no problem with the General Dynamics airplane meeting either one of these requirements. Exhibit 29 should be corrected to show the General Dynamics airplane does meet these loiter mission requirements.

INTERCEPT MISSIONS

"A word on intercept radius. The intercept radius figures shown to the Committee were not evaluated by the Air Force. Since the intercept mission is supersonic, you would expect the General Dynamics airplane, which was evaluated best in supersonics, would be better for the intercept mission. Boeing's figures show it the other way around. This appears to be a case of unjustified optimism. Exhibit 29 should be corrected to show a 'plus' for General Dynamics and the specific figures should be deleted since they are not appropriate comparisons.

INLET LOCATION

"What about selection of inlet location? An upper inlet may be better from a foreign object damage standpoint. That is, things are less likely to be thrown into the inlet which might damage the engine. But from substantially every other standpoint the lower inlet is better. The lower inlet meets the requirement which is to provide 'positive'—and that word comes directly from the work statement—positive assurance that erratic or distorted air flow to the engine will not result in any airplane flight condition. Mr. Stack indicated it might be necessary to limit the angle of attack at which the Boeing airplane could fly because of having the inlets on top. This could be extremely serious in high altitude operations and could result in engine stoppage during spins or other high angle of attack maneuvers. The upper inlet requires that the air be deflected down into the engine. A bend is also required in the tailpipe. These changes in the direction of air flow cause inefficiency.

"The lower inlet improves the inlet efficiency, thus aiding in providing General Dynamics superior supersonic performance. It simplifies on the ground inspection of the duct and the engine compressor face—and experience shows a substantial amount of foreign object damage actually comes from things left in the duct after work has been done on the airplane. It facilitates engine removal and makes it easier to change the installation to accept future engine developments. Testimony shows that the evaluation group rated General Dynamics better in propulsion system installation of which the inlets are a part.

"Troubles with an upper inlet which have to do with its characteristics in flight may not show up until after flight testing starts. Then changes are expensive and time-consuming. Conversely, the problem of protecting the engine from foreign object damage with the lower inlet can be worked out on the ground inexpensively rather than in flight. A quarter scale model has already been tested which indicates the effectiveness of measures being taken by General Dynamics to prevent foreign object damage.

SINGLE WHEELS VS. DUAL WHEELS

"There was some testimony in favor of dual wheels instead of the single wheels as proposed by General Dynamics on the main landing gear. The choice here involves many factors, including the shape and size of the space available for wheel stowage, the type of surface from which the airplane must operate, cost, weight, and brake capacity, to name a few.

"Some of the testimony dwelt on the difficulty of changing a wheel and tire weighing 300 pounds as compared to one weighing 130 pounds. The testimony suggests that the wheel and tire would be handled by muscle power alone. It ignores the fact that simple handling slings are used to solve the problem of lifting and positioning the wheel and tire either with or without the use of standard bomb loading equipment. These slings would be used whether the wheel weighed 130 pounds or 300 pounds. Also, we have devised a method of changing a wheel and tire without a jack, should the unlikely situation occur of having spare wheels and tires, but no jacks. Special equipment is required with either type wheel to get the tire on and off the rim.

"A point which has apparently been overlooked is that the single wheel operates with a lower pressure tire in meeting the same UCI (airfield surface) requirement, and General Dynamics actually was rated better than Boeing. The lower pressure plus the large rolling radius give the single tire an obvious advantage in rolling over rough terrain. In addition, it will not sink as deeply into soft ground, thus rolling easier and doing less damage to the field. Because it turns more slowly and has a larger radius the larger tire can have a thicker tread. This, coupled with the lower operating pressure, makes the large single tire less susceptible to cuts and increases its life. Our analysis indicates that it would only be necessary to change a tire on a single-wheel type landing gear about one-fourth as often as with the dual-wheel landing gear. The logistic and maintenance advantages are obvious, particularly when it is realized that separate records are kept on each wheel, each tire and each brake, and frequent recycling through depot overhaul and inspection is required.

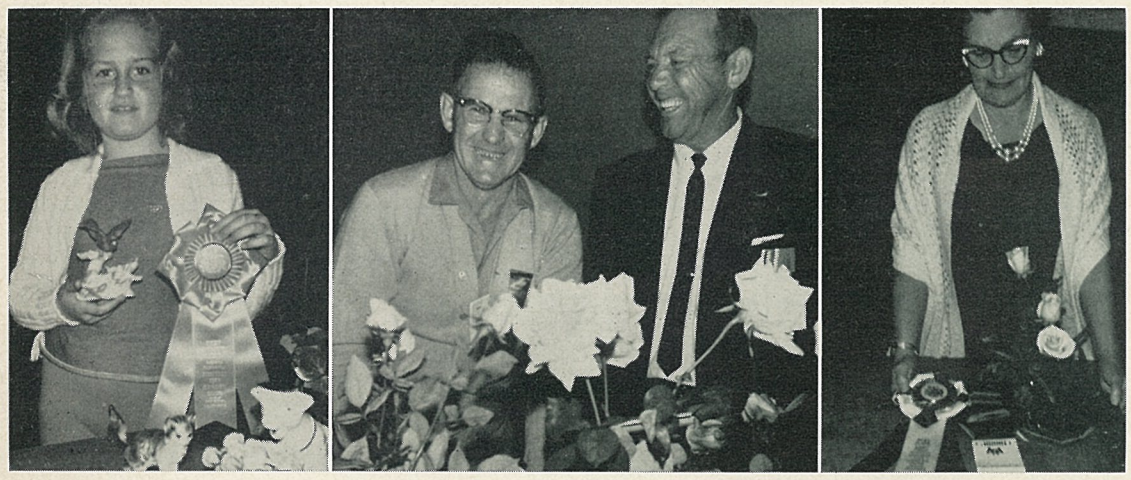
"The Navy has expressed a preference for the single-wheel main landing gear.

BOMBING ACCURACY WITH OPTICAL SIGHT

"There was testimony favoring Boeing's air-to-ground fire control system because it purported to provide increased bombing accuracy. Actually this comment dealt with only a very small part of the total system—the optical sight for visual bombing. To do this requires the display of additional information on the optical glass ahead of the pilot through which he sights the target. This allows him to read such information as the slant range to the target without looking down at the instrument panel.

"This is a desirable feature from an operational standpoint. The optical sight proposed by General Dynamics is an off-the-shelf sight currently in use and was specifically suggested by the work statement. Its choice was consistent with the work statement general requirement for minimum new developments in subsystems. It can be modified to provide the additional information desired. A study is under way to allow the Air Force to determine if the added complexity is justified for visual bombing. However, it should be borne in mind that (deletion) is the complex and expensive requirement for the fire power control system. This would not be affected by changes in the optical sight information display.

(Continued on Page 8)



PRIZE WINNERS—Among best-of-show winners in recent ARA-CRA Garden Clubs' annual Rose Show are (at left) little Carolyn Freedman, 8, with best child's exhibit of Cecil Brunner roses; (at right) Mrs. Herschel Young of Astro Dept. 759-0, best arrangement. In center, Henry Boyd, president of CRA group, and Gene Zimmerman, CRA commissioner, discuss judges' decisions.

Gatterman's 96 Out of 100 Wins Silver Trophy in Trapshoot

Warner Gatterman of Astro shot top score in 16-yd. Class A division of the two-day ATA registered trapshoot sponsored by ARA-CRA Gun Club April 27-28.

Gatterman scored 96 out of a possible 100 to win one of the silver trophies.

Another General Dynamics' contestant, Howard Jacklin of GD/Electronics, took home a silver chafing dish for his prowess in the shoot-off to break a 88-tie with Carl Haynes in the 22-27-yd. handicap event on Sunday. Jacklin's score in the sudden death shoot-off was 22 out of 25. Haynes scored a 20.

Other winners in Saturday matches were: 16-yd. Class B, J. H. Smith, 99; Class C, Carl Cost of Aetna Insurance, 90; Class D. Stan Eggers, 96. Handicap doubles was won by J. H. Smith, 94. Lois Smith topped ladies' handicap 18-21-yd. event with a 93.

Sunday winners were: 16-yd. Class A, Jack Babcock of Santa Barbara, 96; Class B, Roy Day, 96; Class C, Eggers, 95; Class D, Theron Hamilton of Brawley, 97. Hamilton went on to take the handicap 18-21-yd. event with a 93.

High junior was Donald Carlson of Hemet, 88. Edna Gatterman was high lady with 85. Doubles event was won by Gene Lumsden of South Gate with a 91. Lumsden now holds the doubles champion title for the state following California State Trapshoot results last month.

Next registered trapshoot at the Gillespie Field Range will be this Sunday, May 19.

New Pump System Installed For Cooling Wind Tunnel Air

A new dual pump system, now installed at General Dynamics/Convair's supersonic wind tunnel, will save the company thousands of dollars a year through constant operation and easy maintenance.

Plant engineers, who designed the simplified salt water supply pump installation which draws water directly from the bay to cool compressed air blown through the tunnel at speeds up to five times that of sound, say that the new system is one of the first of its kind in Southern California.

"The dual pump system completely eliminates all risk of the wind tunnel being closed down for lack of water," said C. A. Ives, senior plant engineer.

"We no longer will have to bring in auxiliary equipment during emergencies and our corrosion and maintenance problems will be near nil. I would conservatively estimate that we'll save at least $30,000 a year."

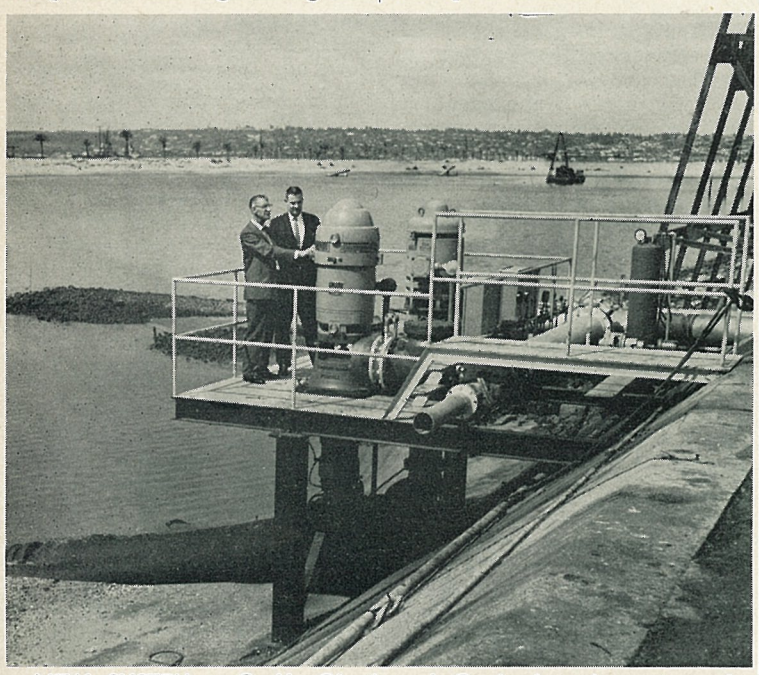
The new system replaces the original sump system by which one pump drew water from a caisson, or well, just beyond the ramp's sea wall. High silting conditions and marine growth often reduced the cooling water flow and damaged wind tunnel components, explained Charles U. Giusti, senior design and construction engineer.

Now, 16-inch concrete asbestos pipes run out 150 feet into the bay to draw the water directly into the system. With two intakes, there is always water enough to supply the 3,500 gallons per minute the wind tunnel must have to keep in operation. And, if one pump needs repair, the other is always standing by to take over.

Flexible rubber sections, 16 feet long, are laid across the sandy beach to connect the pump to the fixed piping. These 16-inch rubber tubes give with the shifting sands to prevent breakage in solid connections.

The entire system is flushed once a month with chemicals to kill seagrowth which, otherwise, would clog pipes and other sections of the system.

California Electric Works' pump division was prime contractor for installation to GD/Convair specifications.



NEW SYSTEM — C. U. Giusti and C. A. Ives inspect newly-installed pump system to supply sea water directly from San Diego Bay to GD/Convair supersonic wind tunnel at ramp.

Send in Your Name For Padres Drawing, Deadline Wednesday

Next baseball drawing for Padres home games will be held May 22.

GD/Convair and GD/Electronics fans must have entries into the CRA office, Bldg. 32, Plant 1, by 3 p.m. next Wednesday to be included in a draw for free tickets to the six games scheduled this month at Westgate Park.

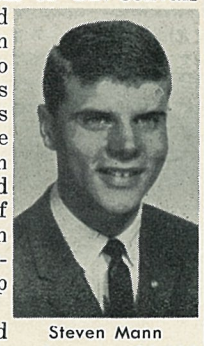
Padres will play Hawaii May 24, 25, 26 and meet Denver on the home field May 28, 29, 30.

Each entry must include full name, clock number, shift, department number, location, plant phone extension. They may be dropped in the baseball drawing box on the insurance counter or mailed to Baseball Tickets, Zone 3-20, Plant 1.

Astro-Convair Son Honored

One General Dynamics son, at least, is piling up honors faster than he can keep track.

Steven Carl Mann, 16, son of Lavelle B. Mann of GD/Convair Dept. 6-5 and Paul F. Mann of GD/Astro Dept. 853-3, has been selected as the first-place boy student in the United States, out of 1,923 entries, in the Thom McAn Leadership Awards.



Steven Mann

The award entitles Steven to a $1,000 scholarship for any educational expense and an all-expense paid trip to Washington, D.C., and New York City.

In addition, Steven has received a four-year scholarship to Stanford University where he will major in psychology and minor in English. He graduates this June from Lincoln High School with a straight A average.

Film Spectacular Discount Offered

Tickets for a performance of the Cinerama spectacular, "How the West Was Won," are available at discount prices for GD/Astro, GD/Convair and GD/E employees.

The showing for General Dynamics folk is at 8 p.m., Sunday, June 2, at Cinerama Theater, 58th and University.

Tickets normally selling for $2.25 can be purchased at employee services outlets for $1.80.

General Dynamics Plants Close May 30

General Dynamics people in all divisions will have a one-day holiday the last of this month as they observe Memorial Day on Thursday (May 30).

Plants will be closed with the exception of necessary maintenance and security personnel. All shifts will report at usual work hours the following day, Friday.

Save Materials—Don't Throw Your Job Away

1,500 Spectators See Rose Show, Astro and Convair Share Honors

ARA-CRA Garden Clubs' joint spring Rose Show was "the best ever," according to Commissioners Everett Henderson and E. L. Zimmerman.

Nearly 1,500 spectators visited the Floral Association Bldg. in Balboa Park on show day April 21 to view the 454 entries. Displays included 396 separate rose exhibits, all grown by members, 40 arrangements, 8 corsages, and 10 children's entries.

Best-of-show honors went to Carolyn J. Buman, Astro Dept. 541-1, for single rose; Walter E. McVay, Convair Dept. 34-0, three roses; C. J. Lewis, Astro Dept. 250, six mixed roses; F. White, Convair Dept. 115, florabunda; C. H. Splinter, Astro Dept. 759, grandiflora; Mrs. Herschel Young, Dept. 759-0, best arrangement; Carolyn Buman, best corsage of Dutch iris.

Carolyn Freedman, 8, daughter of Astro's Richard Freedman, had best child's entry.

Judges for rose entries were James Kirk, American Rose Society judge; Mrs. Kirk, Dr. Troxell, Sam Middleton, and Al O'Bleness of the San Diego Rose Society. Mrs. O'Bleness and Mrs. Sam Middleton of the SD County Arrangements Guild judged arrangements, corsages, and children's displays.

Blue ribbon winners were:

One-bloom roses—C. J. Lewis, Mrs. F. White, Carolyn J. Buman, Lora Lee Young, F. White, Stuart Williams, Isabel Cole, H. S. Boyd, Mr. and Mrs. James Sorensen.

Three-bloom roses—Walter E. McVay, Mrs. F. White, Conrad M. Bley, C. J. Lewis, Grace Zimmerman, F. White, Carolyn J. Buman, W. H. Marshall, Mrs. H. Young, Mr. and Mrs. A. E. Hornby, Mr. and Mrs. J. Sorensen.

Three mixed—Carolyn J. Buman.

Six mixed—C. J. Lewis.

Three stems, florabunda—F. White.

Three stems, grandiflora — Mrs. F. White.

One stem, florabunda—F. White.

One stem, grandiflora—C. H. Splinter.

Miniature rose—J. Perry Nerenberg.

Arrangements—Esther Barksdale, Mrs. H. Young, John Bley, Mrs. C. M. Bley.

Corsages—Yvonne McMillen, Carolyn J. Buman.

Children—Carolyn Freedman, Charles Barksdale.

ARA, CRA Lensmen Join For Contest

ARA-CRA lensmen will meet for their second quarterly contest at 7:30 p.m., May 19 in Photo Arts Bldg., Balboa Park.

Judging of black and white prints and color slides will be conducted.

Also up for discussion will be the group's participation in the 1963 version of Photorama to be held May 26 in the area adjacent to Balboa Park's Conference Bldg.

This annual "photographers' field day" is a combined effort of all San Diego-area camera clubs. The ARA-CRA organization plans to provide a set for this year's event.

15 SIGN FOR TOUR OF MEXICO IN AUG.

Fifteen General Dynamics people signed for the de luxe tour to Mexico at last week's initial meeting. However, there is still room for that many more, if they register by the end of this month, said Jim Hardison, GD/Convair Dept. 15, who is organizing the fourth trip for GD tourists.

A second meeting to review tour arrangements will be held next Tuesday, May 21, at 7 p.m. in the Convair cafeteria main dining room on Pacific Hwy.

All Astro, Convair, and Electronics people interested in traveling by train to Mexico City, Acapulco, and points in between are urged to be present. The group will leave San Diego Aug. 16 or 17 and return during Labor Day weekend.

Complete price of $350 includes transportation by air conditioned train and buses, hotel accommodations, meals, sightseeing, admissions to major attractions, tips.

Deposit of $35 per person must be paid by the end of May, with balance due before departure.

For information call Hardison at his home phone, 276-5805, evenings.

'Iceland' Tickets Offered, Bargain

Discount tickets to "Iceland," 3055 Lake Murray Blvd., are available at GD/Astro and GD/Convair employee services outlets.

They are good for a 35c reduction of regular adult admission, 90c, or junior, 65c, when redeemed at the box office.

Salvage Schedule For Saturday Set

Schedule for the next four Saturdays at GD/Convair and GD/Astro salvage yards is:

GD/Astro—May 18, June 1.

GD/Convair—May 25, June 8.

GD/E Volleyballers Topple Ryan Team

GD/Electronics' volleyball team knocked down Ryan, undefeated first-round champs, as second-half play started May 2 for the National League. Score was 15-12, 15-13.

Hi-Lows of GD/Convair were downed by the Wreckers in two matches out of three, 15-6, 11-15, 15-18.

Dynamics of Astro fell before onslaught of C.S.E.A., 15-12, 7-15, 15-12 in first American League matches May 1. Untouchables, also of Astro, beat City Engineers, 15-9, 15-9.

ASTRO DAUGHTER IN BEAUTY CONTEST

Brenda Diggins, 18, whose mother, Arlona, is in GD/Astro Dept. 960-4, has been selected to represent Ramona in this year's San Diego County "Fairest of the Fair" contest.

McClure Is Keynoter At Quality Meeting

"Highly successful" was an oft-repeated description of the third annual seminar held by the San Diego Section, American Society for Quality Control held April 20 at California Western University.

General Dynamics Corporation men played key roles.

J. Y. McClure, board chairman of the ASQ and General Dynamics director of reliability control and quality control, delivered the welcome address stressing "The Progress of the ASQC."

Phil I. Harr, Astro director of reliability control, discussed "Reliability Program Planning for Space Launch Vehicles" and M. R. Sheldon, assistant to Harr, served as co-chairman of the event. Boeing Company's Dr. Leslie W. Ball made a presentation on "Input Contracting and Purchasing."



QUALITY SPEAKERS—Among key participants in American Society for Quality Control, San Diego Section, seminar were, from left, Phil I. Harr, GD/Astronautics; Dr. Leslie Ball, Boeing; M. R. Sheldon, GD/Astronautics; and J. Y. McClure, General Dynamics Corporation. Latter is national chairman of ASQC.

Bowlers! Summer Leagues Beginning

There still are openings on all GD/Electronics and GD/Convair summer keg leagues getting under way this week in CRA competition, said Jim Hayman and Mike Brooks, commissioners.

Leagues are bowling at four local alleys: Pacific Recreation, Mixed 825 Scratch, Thursdays; Frontier Lanes, 700 Handicap Mixed, Thursdays; Victory Lanes, Mixed Handicap Foursome, Thursdays; Mission Valley Bowlero, Mixed Handicap, Tuesdays. All start at 6:30 p.m.

Anyone wishing a spot on any of the leagues may call CRA office, ext. 1245, Plant 1.

ANNUAL TRAIL RIDE SET FOR MAY 31

Horsemen of the CRA Riding Club and their guests will hit the trail May 31 for their annual trail ride.

Jim Hill, named chairman of arrangements at the May 2 meeting, will be assisted by trail bosses Luke Barbour and Roy Sims.

Riders will gather at The Willows, near Alpine at 10 a.m. Friday. They will end the day at Earl Allen's Rancho near Descanso where supper will be served at 6 p.m.

The next day, after an early breakfast, riders will be on the trail by 9:30 a.m. They expect to arrive at Los Caballos Horse Camp in the Cuyamaca Rancho area by 3 that afternoon. A steak fry and entertainment is planned for the evening.

All General Dynamics people and their friends are invited to join the weekend outing. For information they may call Hill at home phone, 463-6357; Barbour, 466-6536; or Betty Sims, club secretary, 582-8096.

The club's Color Guard will be seen in the line up during the annual parade at Pacific Beach on Sunday (May 26).

Road Runners Trek Planned

Road Runners will trek to Deerhorn Valley Lodge for their outing this weekend, May 17-19, announces Ralph East, CRA commissioner of the trailer group.

The campsite is located about 11 miles east of Jamul on Honey Springs Road, reached by Hwy. 94.

Chuck Risner (Dept. 48), wagonmaster, and his assistant, Carl Scholl (Dept. 6), have arranged a full weekend with square dancing at the lodge on Saturday evening, fishing, nature walks and hiking through the area.

Linksmen to Play Rancho Bernardo

Entries open tomorrow (May 16) for the next CRA links tourney set for June 8-9 over the Rancho Bernardo course.

Starting times can be reserved until May 24 by calling ext. 1705, said CRA Commissioner Ken Wulfemeyer. Greens fees are $4.25.



TROPHY WINNER — Howard Jacklin of GD/E holds silver chafing dish he nabbed in close shoot-off at CRA-ARA Gun Club registered trapshoot.



CREAM OF THE FIELD—Success in annual CRA plant bowling championships brought trophies to these keglers. At top left are all-events winners Billie Jean Lee and Clyde Fabares, while at top right are singles winners Bert Lee, left, who tied with George Lang, right—Billie Jean won women's crown. In top center are members of best mixed team, Five Luckies. From left: Beverly Smith, Barbara Graves, Nobel Coffinberger, Gene Boyd, Stan Smith. At lower left are Willis Carson and Mike Brooks, men's doubles winners, while at lower right are Mary Hathaway and Billie Jean Lee, women's doubles. In lower center are members of Bulldogs, top men's team. Seated is Ernie Altman, team captain. Standing, from left: Jack Bearss, Jim Sargent, Ken Person, Bud Carriker. More than 200 GD/Convair and GD/E keglers participated in events rolled April 20-21, 27-28.

CRA Calendar

(Convair Recreation Association has some 40 actiivties in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m. to 1 p.m., Clairemont Mesa Flying Site.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome.

BOWLING—Openings on summer leagues. Call CRA office, ext. 1245, Plant 1.

CAMERA CLUB — Joint CRA-ARA meeting May 19, 7:30 p.m., Photo Arts Bldg., Balboa Park. Second quarterly contest. Clubs will take part in Photorama, Balboa Park, May 26.

COIN CLUB — Meeting tomorrow (May 16), 7:30 p.m., Convair executive dining room, Pacific Hwy.

DELTA DIVERS — Meeting May 21, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

FISHING—Meeting May 21, 6:30 p.m. potluck, 7:30 p.m. meeting, Gillespie Field Clubhouse.

GARDEN CLUB — Demonstration of orchid potting and corsage making at home of ARA Commissioner Everett Henderson, 3503 Yosemite St., Pacific Beach, 2 p.m., May 19.

GLIDER CLUB—Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF—Entries open to May 24 for CRA tourney at Rancho Bernardo June 8-9. Call ext. 1705.

GUN CLUB—ATA registered trapshoot Sunday (May 19) Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children under 12, 25c.

PISTOL CLUB — Club shoot May 26, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave. IRC pistol division of annual gun shoot hosted by CRA group June 9.

RADIO CLUB — Meeting tomorrow night (May 16), 8 p.m., Harbor Drive club headquarters.

RIDING CLUB — Memorial Day weekend trail ride and campout, May 31-June 2. Color Guard to appear in Pacific Beach parade, May 26.

ROAD RUNNERS — Weekend outing to Deerhorn Valley Lodge May 17-19.

ROLLER SKATING — Free tickets at employee services for May 20 skate night at Skateland, Front and G Sts.

SOFTBALL — Enter departmental teams for "slow pitch" league by tomorrow (May 16) with Pete Beyrer, ext. 1245, Plant 1.

SWIMMING — Family swim night Saturday (May 18), Mission Beach Plunge, 7-9 p.m. Free tickets at employee services.

VOLLEYBALL — Play Wednesday and Thursday evenings, Muni Gym, Balboa Park.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Pitching Title Won by Henos

Three Dept. 171 men tossed themselves into the winners' circle in the first GD/Convair plant washer pitching tournament in several years.

Mike G. Henos was proclaimed singles champ after downing V. G. Minor, also Dept. 171, in a 21-19 final match April 29. Cheered on by crowds of on-lookers, James W. Morris and Frank Soria beat out James Spencer and John Barnes (both Dept. 119) for the doubles title.

Altogether, 36 turned out for the Bldg. 3 tourney held over a week during break and lunch times. Entries came from Depts. 171, 119, 128, 129, and 48. Ralph East and Joe Arena took on organizational chores and kept close tabs on scores.

CRA trophies went to the champions.

County Fair Tickets On Sale at Bargain

Tickets to this summer's Southern California Exposition and San Diego County Fair are now on sale at reduced prices at GD/Convair employee services.

From May 1 through June 8 they may be purchased at 75c for adult admissions; 25c, children. Part of the receipts will go to the San Diego Children's Dental Health Center as a benefit project of the Ninth District P.T.A.

Fair dates are June 28-July 7 at Del Mar Fairgrounds.

Billie J. Lee Sweeps Keg Titles In Remarkable Performance

Top keglers in CRA's 22nd annual championship bowling tournament gathered in their trophies at an award presentation May 2 at Pacific Recreation with Commissioners Jim Hayman and Mike Brooks doing the honors.

Over 200 GD/Convair and GD/Electronics keglers rolled in hot competition during tourney weekends, April 20-21, 27-28.

Twenty-one teams competed in the men's events; 20, in mixed team competition. Men's doubles events had 40 entries; mixed doubles, 31, with 154 taking part in singles.

Billie Jean Lee, wife of Bert Lee of GD/Convair, swept women's all events with a total of 2,191 pins for team, doubles, and singles scores. She also was top gal in the singles event with a score of 678 and teamed up with Mary Hathaway to win the mixed (or women's) doubles, 1,373.

Billie Jean, a 120-average bowler, rolled a 596 scratch series in the doubles!

Men's all events was won by Clyde Fabares with 1,970 handicap total. His scratch score was 1,838.

Top teams were Dept. 171 Bulldogs in men's team events with handicap total of 3,197. Five Luckies won the mixed team competition with handicap score 3,141.

Team members of the Bulldogs were Ken Person, W. E. Carriker, Jim Sargent, Jack Bearss, Ernie Altman.

Five Luckies, a pick-up team which had never practiced together, included Stan Smith who had high three-game total of the tournament with a 660 scratch score, his wife, Beverly, Barbara Graves (husband in GD/Electronics), Gene Boyd, and Nobel Coffinberger.

Commissioner Brooks and Willie Carson took the men's doubles with a combined score of 1,256 (handicap) and 1,192 (scratch).

George Lang and Bert Lee both received trophies for tying up the singles event with handicap scores of 682. Lang had an actual pin fall of 620; Lee, 572.





DEADEYE "DICKS"—Lower shot shows champ washer pitchers James W. Morris and Frank Soria (at left), who took doubles event; Mike Henos (second from right), singles winner. Ralph East, center, and Joe Arena, far right, organized tournament in Bldg. 3, Plant 1, which aroused wild enthusiasm (top shot) as week-long contest went into finals.

(Continued from Page 5)

WEIGHT

"It has been emphasized in the testimony that the General Dynamics design is heavier than Boeing. Let's clarify the record. It was evaluated as being heavier for the Navy airplanes, but it was evaluated as being lighter for the Air Force airplanes. However, there was testimony that the weight of the Boeing-Navy airplane would have to be revised upward to raise the speed to a figure comparable to General Dynamics. Also, for Boeing to provide wing fuel tanks like General Dynamics would require an increase in the Navy weight.

GROWTH CAPABILITY

"The opinion has been expressed that the Boeing design has the greatest growth capability. By growth we assume this means growth in operational capability. The Boeing design is already bigger physically than the General Dynamics design.

"Growth in the basic TAC mission will come easier to the General Dynamics airplane because of its better supersonic design. A proposal for range growth on this mission was presented with the proposal. This consists of a (deletion) which was recommended for study and development. Growth to higher supersonic speeds at low altitude is also enhanced by General Dynamics' better supersonic design and stronger structure. Growth in ferry range and load-carrying capacity for the Air Force airplane is ensured by the option of using the Navy wing tips and the Navy landing gear as described earlier. Growth in loiter capability for the Navy is assured by the excess fuel tank capacity which is available for use at any time because General Dynamics provided an identical fuel-tight wing structure for both the Air Force and Navy as a feature of its commonality approach.

"We have talked about the airplane, now let's consider other aspects of the program.

COST

"Ultimate program cost, not estimates, is the prime consideration. So let's look behind the numbers stated in the cost estimates.

"There are many features of the General Dynamics-Grumman TFX program which support our conviction that our program will cost less than the program proposed by Boeing.

"Some of the most positive cost saving features are as follows:

"Fewer total number of parts
"Fewer uncommon parts
"Less expensive materials
"Simpler engine installation
"Conventional speed brakes
"Less structural testing
"Fewer drawings
"Fewer instructions
"Fewer 'similar parts' which look alike, but aren't
"Extensive and current manned supersonic aircraft experience
"Extensive and current carrier based experience
"Specific variable sweep wing experience
"Better rating in the Fourth Evaluation in the area of 'Production, Management and Cost.'

"In all discussions with the military, cost realism was emphasized. A firm commitment was required covering the RDT&E portion which represents only about 10 per cent in dollars of the total planned program. Realistic and accurate estimates were requested for the production phase and it was evident that this was for Air Force planning purposes to avoid surprise in future budget estimates.

"General Dynamics adhered strictly to these ground rules in preparing its proposal. We did not price the RDT&E program at a loss. It stands on its own in that it does not plan to carry over into production any cost items that properly belong in RDT&E. To be sure, it is a close price but if the program is performed as planned, we will make a reasonable profit.

MATERIALS

"GD's decision to use steel and aluminum as a primary material of construction rather than titanium was based on weight, cost, fatigue characteristics, maintenance and other considerations. GD has used titanium in many applications over the years; it was considered seriously for several places on the TFX. Titanium is, however, at least several times as expensive as steel and aluminum. Its properties are not as well known in the thicker gages which would be required to utilize it extensively in the heavier parts of the structure such as the wing carry through and wing box. Specifically, the data available on fatigue properties show more scatter than for steel, i.e., there is more difference in quality between the worst piece and the best piece. To design conservatively for long life, it is necessary to add enough material to account for the poorest quality piece you might expect. This would cancel part of the weight saving otherwise possible. Also, it was found that the size of titanium plate available was smaller than aluminum so that an additional splice would be required in the wing structure. This ate up a little more of the potential weight advantage. The increased cost for the titanium applications we studied was about $115,000 per airplane. With these factors in mind, it seems to General Dynamics that steel and aluminum offers the better alternative for most applications on the TFX.

EXPERIENCE

"General Dynamics has more experience than any other contractor in the design and manufacture of supersonic aircraft. The F-102, F-106 and B-58 programs have given GD over 50,000 hours of supersonic flying. Boeing has yet to build its first supersonic manned aircraft. Grumman has had carrier based supersonic fighter experience with its F11F. Grumman airplanes have made more than ½ the carrier landings and takeoffs in the history of the U.S. Navy. Grumman has built and flown a variable sweep jet fighter, the XF10F. The General Dynamics-Grumman team had under its belt 4,330 hours of wind tunnel testing and full scale design and construction experience on the XF10F and 4,758 hours of wind tunnel testing on the TFX when the proposal was submitted.

"In over a year of flight testing of the XF10F, its wings were swept and unswept in the air on substantially every flight without difficulty. This conclusively demonstrated the feasibility of the variable sweep concept. This obviates the need for a special prototype program to duplicate this experience before proceeding with the TFX program.

The F-102, F-106, F-11F, XF10F, and B-58 are as close as you can get to the TFX in terms of experience. As guided missile and subsonic SAC heavy bomber are a long way from it. The General Dynamics-Grumman experience in these pertinent programs will save the government and the contractors time and money in learning.

"If experience is worth anything, the GD-Grumman team is clearly ahead for the job to be done.

BI-SERVICE REQUIREMENT—COMMONALITY

"General Dynamics better met the clear requirement for a bi-service aircraft. From the outset, the emphasis was on development of a weapon system that provided minimum divergence between the Air Force and Navy versions. The recurring theme throughout the procurement actions was that changes to the Air Force tactical version of the basic aircraft to achieve the Navy mission were to be held to a minimum. It was explicitly set out as a vital condition in the Defense Department's letter of July 13, 1962, to both companies prior to the submission of the last proposals.

"GD took its customer seriously in this regard and was responsive. GD's commonality approach achieved one aircraft with the minimum divergency requested. The fuselage, wing, and tail of both versions of the General Dynamics TFX are structurally the same. The Navy wing tips are simply bolted on. The Fourth Evaluation Report found that General Dynamics proposed an airframe design that has a very high degree of identical structure for the Navy and that in the two Boeing versions less than half of the structural components of the fuselage, wing, and tail were the same. The Evaluation Group concluded that Boeing, in effect, proposed two different airplanes structurally.

"General Dynamics' greater commonality was not the result of a sacrifice of performance in pursuit of a commonality goal as such. Rather it came as a bonus from a **better idea** on how to satisfy and reconcile the differing performance and structural strength requirements of the two services. Dr. Brown quoted a Navy evaluation briefing as describing our bolt on wing tips as 'an elegant and preferred solution.' Gentlemen, there have not been significant performance sacrifices for the sake of commonality or economy. On the contrary, the bolt on tips, the interchangeable landing gear, the common wing fuel tank and the strength for the same top speed for the Navy and Air Force have been shown to provide performance bonuses when advantage is taken of them. We can be certain that our TAC and Navy operators will think of many more uses than we have suggested. You are, in fact, buying a better and more versatile airplane because General Dynamics came up with a better idea.

"There are several tests of the accuracy of a commonality figure. Are they about the same by weight as by parts count? Under a different definition of parts, are they about the same? We have applied these tests and the results are as follows:

"by AMPR weight	91.9%
"by structural assembly count	90.0%
"by weight empty	89.7%
"by structural parts count	88.5%
"by AMPR parts count	85.2%
"by structure and equipment (without avionics)	83.6%
"by complete airplane including avionics	83.2%
"by fabrication tools required	85.0%

"We have observed that several of the witnesses have attempted to disregard commonality as a cost saving feature with a simple reference to Boeing's lower quote. Also some confusing testimony has been given about similar parts being as cheap as identical parts because the same assembly fixtures may accommodate parts having certain types of differences. But assembly tooling is only part of the story. Each part must be fabricated as a separate unit. On the average about 2.5 fabrication tools are required per part.

"The use of techniques such as numerically controlled machines in the manufacture of parts for modern airplanes has been cited and is recognized as offering substantial economies by reducing fabrication tooling cost. For the last five years, General Dynamics has used tape controlled machines in the fabrication of production parts. Many of our suppliers are using these machines and realizing substantial savings.

"The actual forming, milling, guiding, drilling, and finishing of a part is not the major part of the total task required to incorporate it as an item in the delivered product. The major cost is generated by the need for designing, drawing, releasing, getting material, testing, transporting, listing, stocking, analyzing, segregating, inspecting, identifying, and installing each part as a separate item by part number.

"No matter how small the difference is between two non-identical parts, each of the actions I have mentioned must be accomplished distinctly for each part number. Of the total parts in th airplane less than 5% will l made on a numerically controll mill.

"It is well known in industi that the design, developmen test, production and support cos for a number of identical weapo systems are less than such cost would be for a mixture of tw different weapon systems. Th higher the degree of identity th more the savings.

"The logistic support peopl are aware of the savings obtaine by reducing the number of dif ferent stock numbers required t be carried in the system, and the dangers present in having simila parts which look alike but have different strengths or other characteristics which might inadvertently get installed on an airplane with catastrophic results. This is a serious problem in peacetime with elaborate controls. In wartime it can become a monumental problem.

ADDITIONAL ADVANTAGES

"Testimony has been submitted which shows that in the Fourth Evaluation Report General Dynamics' superiority in the following significant areas were listed.

"1) Better structural design
"2) A higher rating in the 'Production, Management and Cost' area
"3) A better 'scheduling' program
"4) An edge in supersonic maneuverability at altitude
"5) Better proposed programs in the Personnel Subsystem and Aerospace Ground Equipment
"6) A slight edge in the flight control area
"7) A low radar cross section and an integrated penetration aids system

COMPETITION

"General Dynamics believes in competition. To be equitable, any competition must take place under ground rules which are known and understood by the competitors and by the judges. In the case of the TFX, these ground rules consisted of the Work Statement and associated instructions plus the directives from the Department of Defense.

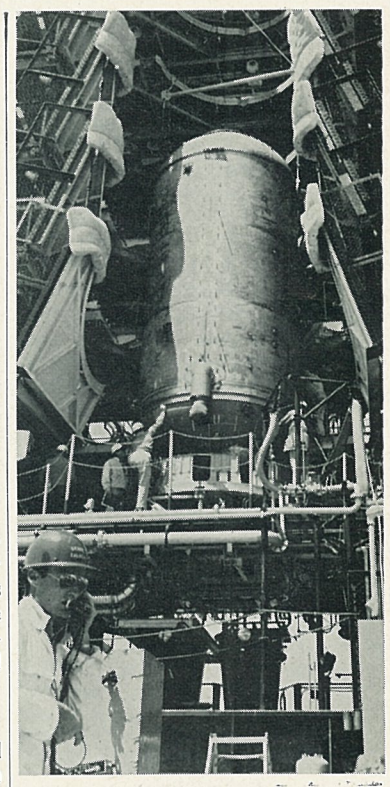
"There are over 1,600 requirements of one kind or another set forth in the Work Statement, not including those applicable by reference to other specifications which number in the thousands. A great deal of the 275,000 manhours spent by the evaluation group was directed toward measuring the degree to which the competitors met the requirements of the Work Statement. Their scoring is perhaps the most valid measure of each competitor's performance against the rules of the competition established by the Work Statement. You will recall that both the raw score and the weighted score favored General Dynamics. This is a basic fact that cannot be disregarded.

"The degree to which the second set of ground rules, i.e., the Department of Defense Directives, were met was properly judged by the Department of Defense itself, and in this framework of rules, General Dynamics again won the competition.

"In short, a careful review of the testimony and the facts will support the conclusion that General Dynamics properly won the competition.

CONCLUSION

"The TFX is extremely important to national defense. It is more than just another airplane. Once we decided to compete for it, we went all out. We designed the plane to the highest standards of excellence to meet the fundamental objectives. We have been hard at work developing it for our customers ever since notification that we had won the competition. Everything I have learned since then, including the information produced at these Hearings, convinces me that our margin of superiority is substantial. I believe we have a solid basis to confirm to you that the General Dynamics' TFX is a very superior weapon system and that the program presently planned will be achieved at the lowest possible cost to the taxpayer."



SNUG FIT — GD/Astro crews at Edwards RS gently swing new Centaur battleship propulsion test vehicle tank into place on Stand 1-1. Note mattresses placed as fenders to guard against scratching. Talker in foreground is Paul Witten.

'BPTV' Readied For Hot Firing

EDWARDS RS—A BPTV on TS 1-1 here at ERS is being readied "PDQ" by GD/A crews.

If you missed a point, General Dynamics/Astronautics crews here at Edwards Rocket Site (ERS) are working swiftly (PDQ) in installation buildup of a battleship propulsion test vehicle (BPTV) mounted on Test Stand 1-1 (TS 1-1).

First of its kind, the BPTV represents the efforts of many groups and is destined to serve the Centaur test program.

It was designed and fabricated at the main plant. Tooling turned out the basic components. Major assembly handled welding. Inspection ran exacting X-ray checks on all seams. Checkout ran the unit through a series of steps, including the hydrostatic test tower. It was then cleaned and trucked here over a roundabout route, due to excessive height.

The BPTV is made of heavier (up to ⅜th inch) stainless steel than that used in flight vehicles. Thus, it may be used repeatedly in "hot firings," impossible in lighter vehicles.

Hartwig Transferred To Electric Boat

R. C. Hartwig, chief of systems and procedures and data processing at General Dynamics/Convair, transferred the first of this month to Electric Boat Division as manager of systems and procedures.

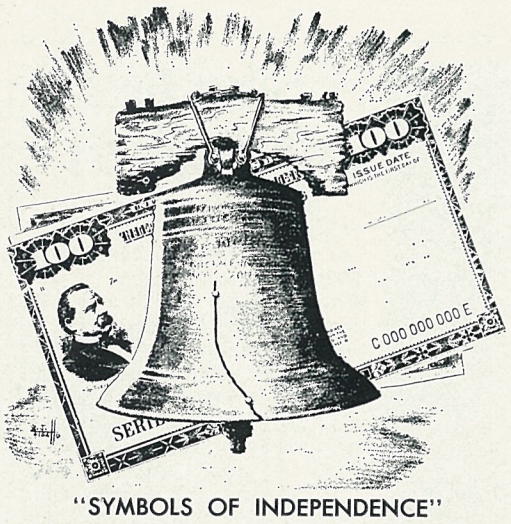
Hartwig has been with General Dynamics Corporation since 1955 when he joined GD/Fort Worth as manufacturing engineer. He transferred to GD/Convair in 1961 in applied manufacturing and research and was promoted to manager of systems and procedures and data processing early in 1962.

For the time being, G. O. Withem, chief of data processing, and B. W. Kahla, chief of systems and procedures at GD/Convair, will report directly to W. R. Bruce, director of operations.

GD/Convair Analyst Serves Conference

W. B. Heller, senior systems and procedures analyst at General Dynamics/Convair, is serving as an official of the Tenth Annual Western Conference at Los Angeles, Calif., May 16.

Heller's committee is responsible for Conference participation by San Diegans. He is a past president of the San Diego Chapter of the Systems and Procedures Association.



"SYMBOLS OF INDEPENDENCE"

70 Pct. Goal Set For Bond Buying

A four-pronged drive to increase U. S. Savings Bonds purchases by payroll deduction will begin June 17 for General Dynamics/Astronautics, GD/Pomona, GD/Convair and GD/Electronics-San Diego.

It will be keyed with a nationwide campaign among major companies, aimed at boosting the percentage of bond buyers to 70 per cent or more of employment.

"I know you understand how important it is that we succeed in raising our percentage of participation . . . and I am sure you know my deep interest in having our Corporation effectively support this effort," Roger Lewis, president of General Dynamics, wrote division presidents. "With your enthusiastic assistance, General Dynamics can reach its goal."

Each division will conduct its own

(Continued on Page 4)



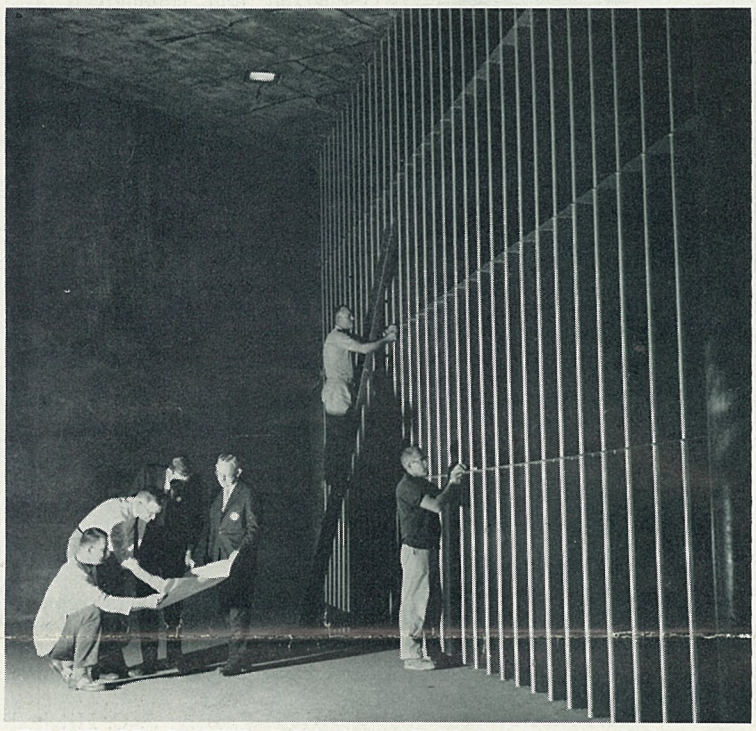
ROGER LEWIS

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR and GD/ELECTRONICS)

GENERAL DYNAMICS
NEWS

Vol. 16, No. 11 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, May 29, 1963



TUNNEL RENOVATED — Workmen finish installation of new vanes in GD/Convair low speed wind tunnel while consulting over plans (from left) are C. A. Ives, senior plant engineer; Bill Odle, facilities engineer; Hugh Weckerly of SD Sheet Metal Works; and John Struthers, in charge of tunnel operations.

Wind Tunnel Cooling System Improved by New Steel Vanes

GD/Convair's low speed wind tunnel operations have been greatly improved with replacement of the vanes which control air cooling of the system.

Installation of the new sheet steel vanes was completed last week. Four tiers of 5-ft. high sections enclose two sides. Sides are approximately 30 feet long and adjacent to the north leg of the circuit.

J. H. Struthers, aerodynamics lab group engineer in charge of the low speed wind tunnel under W. T. MacCarthy, aero lab chief, said that the renovation is a substantial improvement in the tunnel's operating conditions and environment.

"The new vanes, which are cambered to turn the air at 90-degree angles at each corner, will keep the temperature in the tunnel under control. Models under test could suffer serious effects and instrumentation problems would arise if we did not have an adequate cooling system."

Water tubes run through each of the vanes to cool the air moving through the closed tunnel circuit.

Contracting company on the installation was the San Diego Sheet Metal Works under supervision of GD/Convair plant engineering.

"The contractor did an excellent job on this installation and completed the work ahead of schedule," said C. A. Ives, senior plant engineer.

Planning Gets GD/E Emphasis

A separate planning function has been established in a recent reorganization of the plans and programs department of General Dynamics / Electronics-San Diego, according to an announcement by General Manager John L. Lombardo.



Ira Sykes

Ira D. Sykes Jr. has been selected to head the new function as manager of planning under J. W. Colvin, manager of plans and programs.

"The new group will provide greater emphasis for planning throughout the GD/Electronics division," said Lombardo, "with the plans and programs depart-

(Continued on Page 2)

Value Coordinators Hear 'Think' Talk

John Rohrbough, Navy training coordinator for the 11th Naval District gave a special presentation on "Creative Thinking and Brainstorming," at GD/Convair last Friday.

Value control coordinators and key personnel from all departments attended. Arrangements were made through H. P. Williams, value control manager, and H. W. Rubottom of educational services.

Convair-Built Updating Kits Leave Factory

First kits completed at General Dynamics/Convair under an Air Force contract to update F-102s for the GAR-11 missile will go out of the plant this week for proofing at Mobile Air Materiel Area.

These three aircraft sets are part of 124 being built at GD/Convair under an order received the end of January from the AF's San Antonio Air Materiel Area. They consist of the center missile bay door and related hardware to accommodate installation of the GAR-11 missile in F/TF-102As based with Air Force squadrons.

Details were in fabrication in Dept. 140's Bldg. 4 area within 30 days of receiving the order with assembly begun the last part of March. First production deliveries to SAAMA will start next month. Completion of all units is slated by the end of the year.

GD/Convair originally built 500 aircraft sets of the same type of kits approximately three years ago. Service parts, which is administering the contract, says that the current order might possibly lead to additional procurement of similar kits which would allow continuation of the manufacturing task through the summer of 1964.

Calif. Firm Buys 990As

Sale of two Convair 990A jet transports to California Airmotive Corporation of North Hollywood, Calif., was announced last week by President J. H. Famme of General Dynamics/Convair.

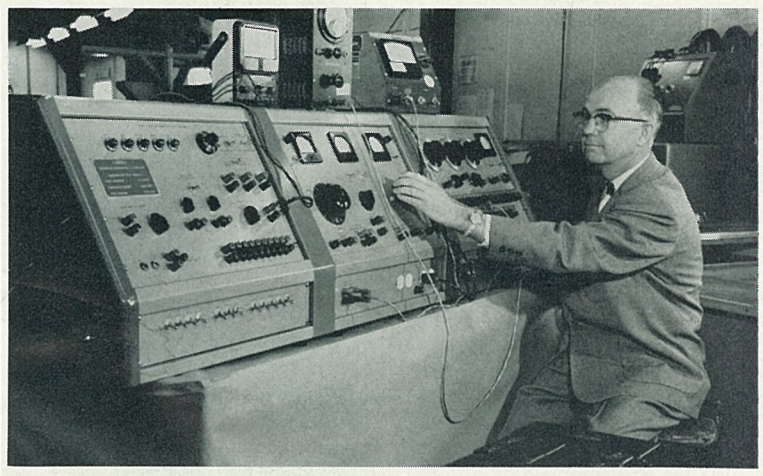
Allen E. Paulson, president of California Airmotive, said that the firm intends to resell or lease the aircraft.

The two jet airliners, slated for July delivery, will be minus interiors but of the latest speed and range-improved configuration. California Airmotive will modify the 990As to customer requirements for passenger or combination passenger and cargo service.

Baseball Drawing Set for Next Week

Third drawing for free baseball tickets to coming home games of the Padres will be held at noon next Wednesday (June 5), at employee services.

GD/Convair and GD/Electronics fans will have a chance to see one of 10 games scheduled from June 7 through June 16, courtesy Convair Recreation Association if their names are pulled from the hat.



AUTOPILOT TESTER — W. H. Highfill, Dept. 171 electronics engineer, at console of GD/Convair designed and built autopilot test equipment sent last month to Viasa, Venezuelan airline.

Portable Test Bench Designed To Check Jetliner Autopilots

A compact, portable test bench for checkout of components of the Sperry autopilot was built by GD/Convair in record time for Viasa, Venezuelan airline. This autopilot is used in several Convair jet transport versions.

The first test equipment of this nature to be built at GD/Convair was delivered to Viasa aboard its third 880-M which went out of the San Diego plant the latter part of April.

Electronics section of Dept. 171, field operations, was prime contractor — handling all design, engineering, procurement, and assembly. Spearheading the project, which entailed several months' advance work before the actual order was received late last year, was Jack Cox, at that time Dept. 171 electronics foreman.

As coordinator, Cox was assisted by W. H. Highfill, Dept. 171 electronics engineer assigned to design duties, Ray Wyborny and Jim Gallagher who were directly concerned with the fabrication. L. J. Hayes of service parts handled the contract details.

The test bench, designed to make a thorough and dependable checkout of the more complicated components of the SP-30 autopilot system, was completely finished and ready for shipment within 90 days after go-ahead was received from Viasa.

It is capable of testing all SP-30 autopilots, regardless of the model aircraft, right at the airline's base of operations, eliminating need of sending the unit far distances to other agencies or back to the manufacturer.

This convenience saves the airline considerable money and down time, emphasized Hayes who now is preparing brochures offering the same equipment to other Convair jet transport customers. SP-30 autopilots are installed in Convair 880s, 880-Ms, and 990s flown by Delta Air Lines, Japan Air Lines, Viasa, Civil Air Transport, American Airlines, Swissair, Varig of Brazil, and on order for Garuda of Indonesia.

With minor variations, the GD/Convair autopilot test bench can be adapted to any SP-30 autopilot.

Management Club Reschedules Program on Stock Market

Management Club members finally will get their chance to learn about the stock market, and, if they are lucky, win actual shares of stock, at the June 12 meeting.

The program, originally planned by industrial engineering department for April, was postponed to allow presentation of the President's Award at that time.

R. J. Haney, general chairman, said that all plans first set up will remain the same. Meeting place is the Copper Penny Restaurant in College Grove Shopping Center with social hour at 5:30 p.m. and dinner at 6:30.

Featured speaker will be H. B. Esky, regional sales manager of Dreyfus Corp., investment company. He will discuss stocks and bonds in general, with special emphasis on mutual fund investments. Also, he will show a New York Stock Exchange film, "What Makes Us Tick."

Shares of stocks in going concerns will go as prizes to GD/Convair and GD/Electronics lucky ticket-holders.

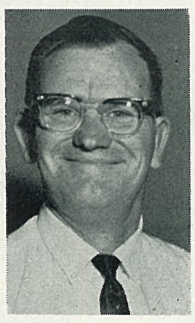
MacSave-it awards for April and May and Mug of the Month trophy will be presented.

Tickets, at $2.75 each, will go on sale next week at all GD/Convair and GD/E outlets.

Log Book Entries



David E. Wilkinson, Dept. 140, recently received congratulations on 35th anniversary from President J. H. Famme of GD/Convair.



Spencer R. Hickok, Dept. 101, wears new service emblem as he completes 25 years of GD/Convair service.

Service Emblems

CONVAIR

Service emblems due during the period May 16 through May 31.

Twenty-five-year: Dept. 171, G. F. Cooper.

Twenty-year: Dept. 6-3, Melvin Clause; Dept. 48-70, R. G. Huff; Dept. 101, Peter Gourdin; Dept. 115, H. G. Steiger; Dept. 129, G. R. Williams; Dept. 131, F. W. Sickler, Louis Torres; Dept. 141, J. L. Moreno, Francisco Posada; Dept. 171, R. D. Bauld.

Fifteen-year: Dept. 14-5, Juanita H. Duncan; Dept. 25-5, J. W. Wilson; Dept. 27-6, Inez M. Danielson; Dept. 42-2, P. R. Manos; Dept. 131, L. H. McClanahan; Dept. 133, G. T. Loeffler.

Ten-year: Dept. 16, L. S. Elmstrom, J. L. Hoover; Dept. 23-3, J. R. Mackill, Frances J. Shelton; Dept. 25-2, Clabione Edwards; Dept. 400-3, B. D. McCormack, W. C. Young.

GD/ELECTRONICS

Fifteen-year: Dept. 34-00, J. A. Detate; Dept. 51-00, J. E. Hardy; Dept. 72-00, L. B. Blalock; Dept. 74-40, B. J. Jeffries.

Ten-year: Dept. 73-20, C. H. Hofer; Dept. 76-00, Hazel M. Barnard.

Retirements

CONVAIR

ABBEY—Marvin B., Dept. 206. Seniority date March 26, 1952, retirement effective March 1, 1963.

ARNOLD—Ernest C., Dept. 14. Seniority date Dec. 1, 1952, retirement effective May 10, 1963.

BOOKER—Clarence W., Dept. 48-21. Seniority date Jan. 28, 1952, retirement effective April 7, 1963.

BROWN—Frank, Dept. 48-72. Seniority date Sept. 26, 1955, retirement effective March 28, 1963.

CONLEY—John A., Dept. 137. Seniority date Feb. 25, 1953, retirement effective Jan. 28, 1963.

CORBEILLE—Marc S., Dept. 401-4. Seniority date Jan. 17, 1949, retirement effective May 10, 1963.

FRALICK—Micaela E., Dept. 140. Seniority date July 18, 1951, retirement effective April 5, 1963.

FRANDSEN—Carl W., Dept. 136. Seniority date June 27, 1950, retirement effective May 10, 1963.

JENKINS—Edmonia G., Dept. 101. Seniority date Oct. 31, 1950, retirement effective Feb. 26, 1963.

KEEL—Hugh H., Dept. 123. Seniority date Jan. 19, 1951, retirement effective March 20, 1963.

MONAHAN—George W., Dept. 48. Seniority date Sept. 22, 1947, retirement effective May 10, 1963.

PYLE—Ray D., Dept. 48-51. Seniority date Nov. 17, 1955, retirement effective March 11, 1963.

RATCLIFFE—Merle T. Sr., Dept. 25. Seniority date May 15, 1950, retirement effective March 7, 1963.

ROBINSON—Victor W., Dept. 25-8. Seniority date Nov. 9, 1953, retirement effective March 11, 1963.

STEDILLE—Edward A., Dept. 25-1. Seniority date Nov. 17, 1950, retirement effective March 7, 1963.

TUCKER—Nellie B., Dept. 14-4. Seniority date March 9, 1951, retirement effective May 9, 1963.

Deaths

CONVAIR

LESTER—Shirley H., Dept. 25-6, died May 11. Survived by three sons, two daughters, parents, brother and sister.

Births

HOLLOMAN AFB

COVINGTON—Son, Robert Russell, 6 lbs., born April 4 to Mr. and Mrs. H. B. Covington, Dept. 313.

GARRETT—Daughter, Kimberly Susan, 6 lbs., 4 oz., born March 13 to Mr. and Mrs. L. A. Garrett, Dept. 313.

GD/E Apprentice Earns Honor

Richard C. Singer, assigned to GD/Electronics, was singled out for honors last week when he was named "Outstanding Apprentice of the Year" by a sub-committee of the GD/Convair Joint Apprenticeship Committee.

Runner-up in the annual contest was James E. McEvoy, now taking the last year of his four-year airframe and powerplant apprenticeship in GD/Convair Dept. 171. Singer is a fourth-year electronics apprentice.

Singer received a $50 check from GD/Electronics and a commemorative plaque from GD/Convair. H. J. Stuart, GD/E manager of reliability and quality control, made the presentation.

Selection of the top apprentice of the year is based on quality and quantity of work, attitude on the job, versatility, attendance, school grades, leadership potential, off-the-job achievements.

Judges, appointed by H. W. Rubottom, chairman of the GD/Convair committee, were L. W. Turner of GD/Convair educational services; L. F. Kruse of GD/Electronics; J. F. Young, GD/Convair Dept. 401; and K. D. Fawcett of San Diego Junior Colleges.



TOP APPRENTICE — Richard Singer (right) receives "Apprentice of Year" plaque and check from H. J. Stuart, GD/E manager of reliability and quality control.

GD/E GOLF CLUB SETS JUNE 2 TOURNAMENT

Next tourney for the GD/Electronics Golf Club will be this Sunday (June 2) at Bonita Golf Club. For information on GD/E golf activities and tournaments call Ernie Paul, Plant 2 (Hancock St.), ext. 91; or Bud Cooper, Plant 1, ext. 1919.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending May 10 and May 17.

Dept. 25, E. E. Nyberg, $69.40 (final payment).

Dept. 101, W. J. Gramse, $250.65 (final payment).

Dept. 115, A. H. Burnett, $10; L. H. Roberts, $11.30.

Dept. 119, R. W. Talmage, $13.90.

Dept. 141, I. D. Howarter (two awards), $10 each.

Dept. 171, G. A. Hasti and J. Korchick (joint award), $7.50 each; A. I. Cox and C. H. McCullough (joint award), $8.05 each.

Cost Improvement Proposals for same period.

Dept. 16, H. B. Day.

Dept. 115, W. J. Durflinger.

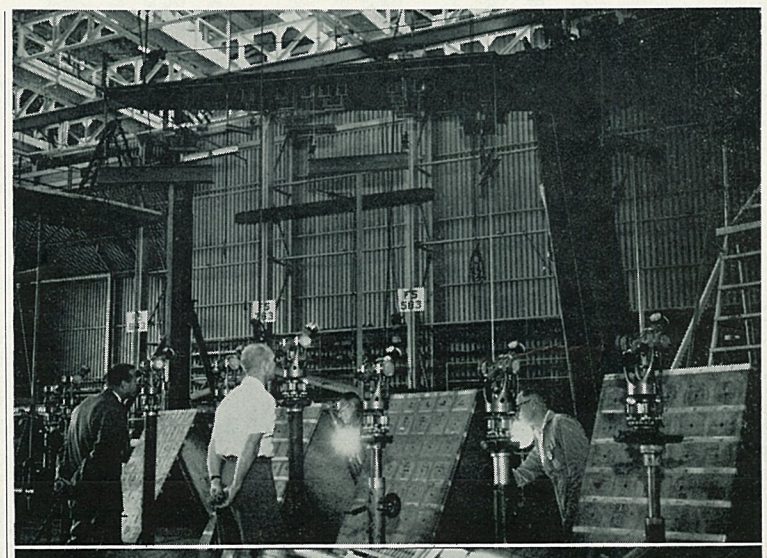
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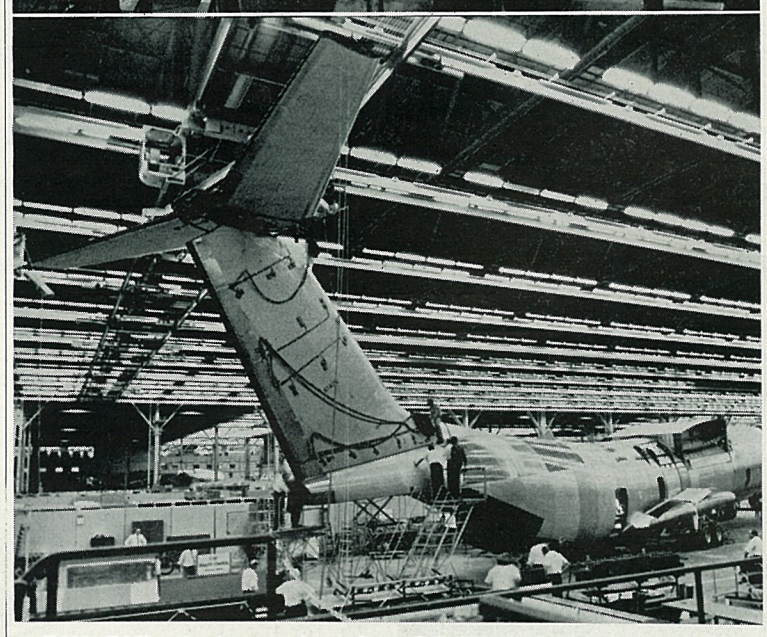
Dept. 401, V. P. Mavrinac.

Rider-Driver

CONVAIR

RIDE WANTED—4:30 p.m. to 1 a.m., from area of Hilltop Drive and L Street, Chula Vista, to Plant 1. Zacarias Toribio, home phone 427-1766.





TALL TAIL—In lower shot, first C-141 empennage is mated to fuselage at Lockheed-Georgia Co.'s Marietta factory. Aft fuselage had to be lowered and front tilted to permit high tail section to be placed on top inside building. At top, John Gillette and Don Bowers of GD/Convair structures lab sight through transits at mirrors mounted on C-141 horizontal stabilizer while F. O. Peterson and M. G. Henderson, both Dept. 131, mark points on graph boards during stiffness tests.

Mirrors Accomplish C-141 Stabilizer Test

Tricks by mirrors measured stiffness of C-141 stabilizers in recent structural testing at the GD/Convair ramp laboratory.

During loading, from 3,000 to 28,000 pounds per side, structures test engineers recorded angular changes due to torsion by sighting through a row of transits at nine mirrors mounted along the edge of vertical and horizontal stabilizers. Mirrors reflect crosshair images back to scale graph boards to indicate deflection changes.

In this way torsional and bending stiffness can be calculated to confirm design requirements, explained John Gillette and W. D. Bowers, test engineers in charge of the test project.

This was the first time the mirror method had been used in structural testing at GD/Convair structures lab, they said. It was particularly applicable to these specific tests to gather criteria which is vitally important because of the pivotal function of the C-141 horizontal stabilizer.

In other related tests, the pivotal joint was subjected to yaw and roll stiffness testing.

Test results will go to Lockheed-Georgia Co. for evaluation.

Realignment In Engineering

A realignment of the engineering organization within General Dynamics/Convair was announced last week by President J. H. Famme.

Now reporting directly to Famme are five program managers: J. M. Adamson, C-141; J. B. Hurt, Little Joe II; C. L. Jackson, SATS Mats; A. J. Savard, 880 and 990 jet transports; J. J. Wheeler, F-102/F-106.

Reporting to C. W. Frick, vice president-engineering, are J. S. Bergstrom, director of space systems; M. C. Curtis, director-engineering; R. R. Hoover, director-test systems; B. J. Simons, director of airborne systems.

"These organizational changes are a part of our continuing efforts to concentrate our full resources to meet the sales opportunities that present themselves," explained Famme in making the announcement.

Planning Gets GD/E Emphasis

(Continued from Page 1)

ment responsible for establishing the processes for planning and business forecasting, and coordination of all efforts and collection of data to carry out this very important function."

The planning function will conduct government and industrial requirements research, analyze current and projected economic conditions, and the application of current and proposed division products to potential market requirements.

It will keep GD/E management informed of business trends, opportunities, and potentially profitable areas of research, development, and design on new and updated products.

In addition to holding the post of manager of planning, Sykes also is currently acting manager of international and inter-divisional requirements.

Reporting to him are L. E. Diamond, advance planning; P. F. Walz, product planning; S. R. Viejo, requirements research — industrial and commercial systems; R. A. Glaeser, requirements research—tactical and marine systems, Army, Navy, Marine Corps, NSA, AEC, DIA; S. M. Chesler, requirements research-aerospace systems, AF, FAA, NASA, DCA.

Other plans and programs managers reporting to Colvin are: J. G. Melvin, manager of government requirements; G. W. McGinley, manager, and N. E. Frawley, assistant manager, industrial requirements; R. L. Brouillard, manager of program administration.

Melvin also is acting manager-sensor products. Reporting to him are D. O. Campbell, AF and FAA requirements; J. E. Bowen, Navy and Marine Corps requirements; L. S. Castillo, NASA and AEC requirements.

Also under Melvin's responsibility is data products requirements with C. V. Shannon, manager. Other personnel assigned to this section are J. H. Redman, AF and FAA; J. H. Gurley, Army, NSA, DIA; J. C. Mitchell, Navy, DCA and Marine Corps; H. B. Cody, NASA and AEC.

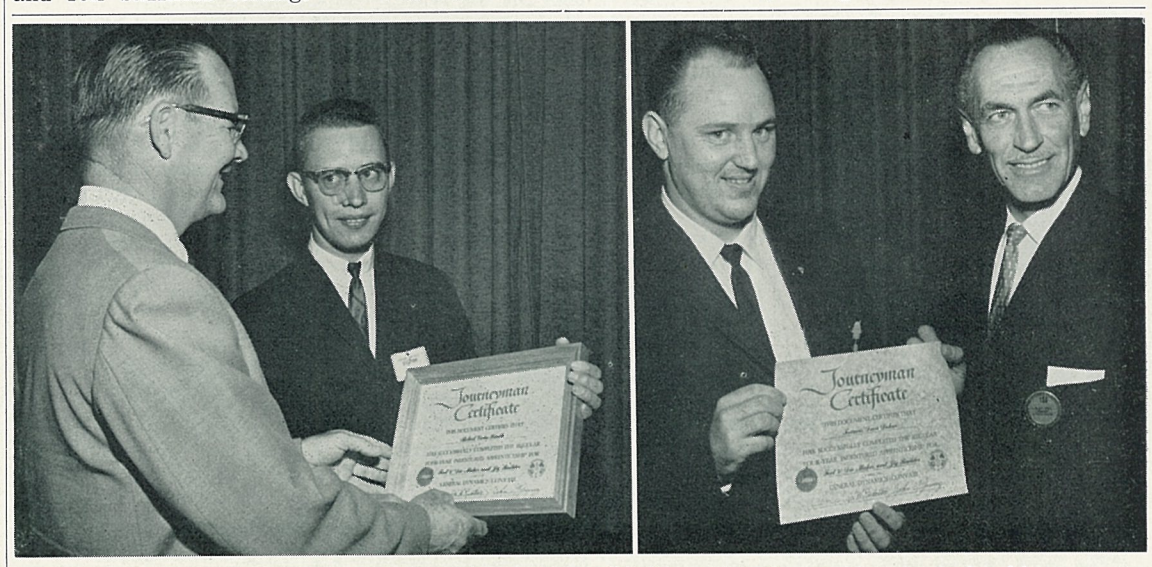
Under McGinley are H. G. Cooper assigned to the Northeast region; H. W. Holmerud, Southern region; D. O. Brending, Northwest region; Frawley, Southwest region; M. L. Rice, Metropolitan, Washington, D. C., and New York City.

Reporting to Brouillard in program administration are R. E. Kenyon, D. L. Zimmerman, H. Wood Jr. assigned to sensor products; V. J. Stubbs, T. G. Connelly, D. M. Fleischhaver, data products.

Lawson Installs New Ryan Club Officers

L. G. Lawson of GD/Convair installed new officers of Ryan Aeronautical Management Club last Thursday.

Lawson is president of the San Diego Area Council, NMA, and past president of the GD/Convair Management Club.



NEW JOURNEYMEN — Latest to graduate from GD/Convair's four-year apprenticeship program are (at right) Francis Dohm, "outstanding apprentice" for 1962, now assigned to Dept. 6 after receiving journeyman's certificate from W. D. Reed, manager of manufacturing. In photo at left, Robert G. Smith receives his certificate from O. W. Sweetland, tooling superintendent. Both took apprenticeships as tool and die makers and jig builders.

General Dynamics NEWS

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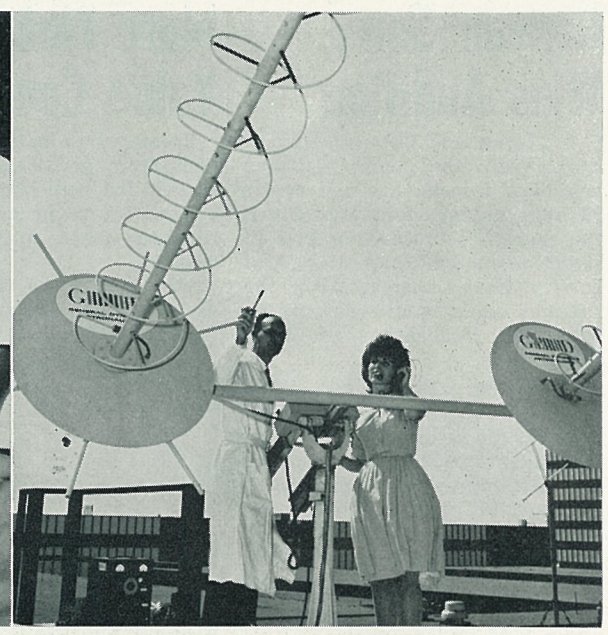
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* * *

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CHEERS — GD/Astronautics led cheering during highly successful Cooper orbits, but other General Dynamics divisions supplied echoes. At top left, B. G. MacNabb, GD/Astro operations director at AMR, shakes hands with astronaut as he enters elevator just prior to flight, while J. R. Dempsey, GD/Astro president, is in background. In center Nancy Brown, Burt Brockett and Maurice Wood of communication dept. turn out first plant notice. At right, at tracking station atop Astro's Bldg. 4, Dave Fyffe and Mary Peddy pick up capsule on first pass over San Diego. Astro's Atlas 130-D launched Cooper into orbit.

Cheers For Cooper's Epochal Flight Include Kudos For GD/Astro's Part

While the nation and the world feted Astronaut Gordon Cooper, General Dynamics Corporation folk who played vital roles in his success quietly accepted congratulations from many points.

Details of Cooper's orbital flight aboard Mercury MA-9 spacecraft "Faith 7" are legendary. So is the perfect launch of Atlas 130-D which made it possible.

The launch phase was dubbed a "textbook flight" and "picture shot" executed with the "precision of a turkey shoot." Each description was a direct tribute to the thousands of men and women within General Dynamics who contributed that "extra something" that has made the manned Mercury flight program a perfect success.

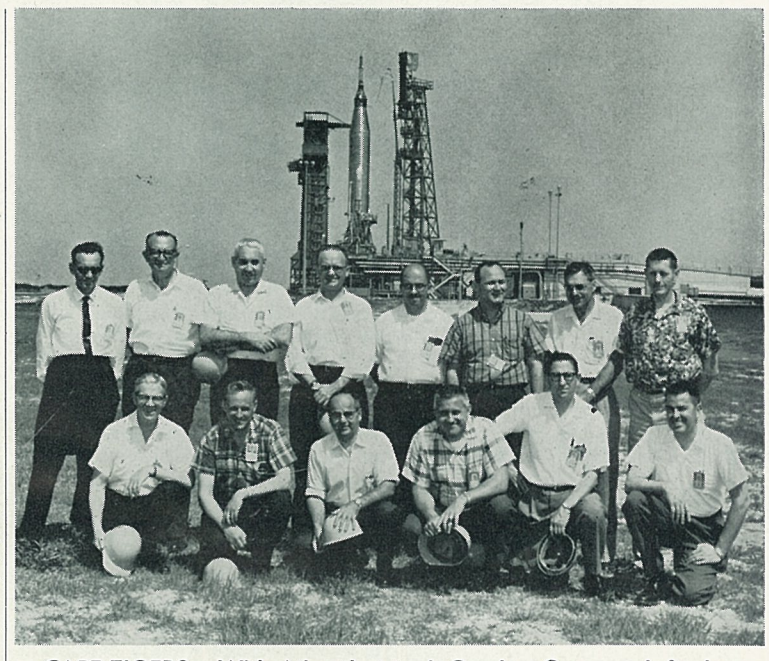
Gen. Bernard Schriever, commander, Air Force Systems Command, summed up official feelings in a letter to GD/Astro President J. R. Dempsey lauding Astro employees.

"Results reflect a brilliant culmination to many months of preparation and each man and woman has every right to be proud of a job extremely well done. I would appreciate your conveying my deepest appreciation to all of those concerned with the flawless performance of the booster system and completely successful launch operation," wrote Gen. Schriever.

Major Gen. Ben I. Funk, commander, Space Systems Division, AFSC, bestowed special commendations on T. J. O'Malley, Astro launch operations manager, and C. D. Fowler, site manager, and those who work with them.

General Funk said:

"I am well aware of the vital role which Atlas has played in the Mercury Program and a great deal of credit for the success of the program is due to the untiring efforts you and the members of your staff have put forth in assuring the reliability of the booster and the safety of the astronaut . . ."



CAPE TIGERS—With Atlas that took Gordon Cooper aloft gleaming in background, members of "Tiger Team" at Cape Canaveral pose for historic picture. At left, kneeling, is C. F. McCabe, team captain.

Azusa Continues Fantastic Record For Reliability on Cooper Flight

The May 15 launch of Mercury Astronaut Gordon Cooper marked the 500th time Azusa—General Dynamics/Astronautics' fantastically reliable tracking system—performed its vital tasks for the nation's space effort.

Range safety, missile system evaluation and orbit determination: these are the assignments to which Azusa has contributed during nearly every launch over Atlantic Missile Range.

Its reliability: 99.2%.

In the 17 years since its development began in conjunction with the MX-774 program (from which Atlas also evolved), Azusa has been a growing tribute to ingenuity, engineering innovation and skill, advancing technology —and perhaps most of all, to people.

J. W. Crooks and **R. C. Weaver** were part of the MX-774 guidance study undertaken by GD/Astro's parent Convair division in 1946, and are credited as co-inventors of Azusa.

As early as 1947, an experimental system had been built which successfully tracked an aircraft to 139 miles with an error of 800 feet during tests in San Diego.

By 1949, the Air Force had expressed interest in the expanding system, and a contract for a complete tracker was awarded. The following year, another Azusa veteran, **Al Roth**, joined the program.

Also involved from those early days were **D. C. Prim, J. R. Blackwood, L. N. Lawhead, D. H. Roll, J. C. VanCaster, D. M. Hill, T. B. Field, M. M. Cox.** All were on hand to see the system — Azusa Mark I — completed in 1953, and installation begin at Cape Canaveral.

Convair and Atlantic Missile Range conducted field tests on the system through 1956, tracking aircraft and ballistic missiles as early as 1954.

Joining in the growing program during those years were **J. J. Maxwell,** and **R. J. Jacobs, W. R. Benton, Albert Wittenberg, R. A. Harwood, A. R. Horsely, A. C. Greeley, L. G. Chase, T. H. Scholder.**

On Oct. 2, 1956, data on the experimental system revealed fantastic promise: Azusa Mark I, if equipped with appropriate missile transponder and antenna, could track up to 3,000 miles!

That same year, GD/Astro received a definite contract for a permanent, operational system — Azusa Mark II — to be installed at the Cape.

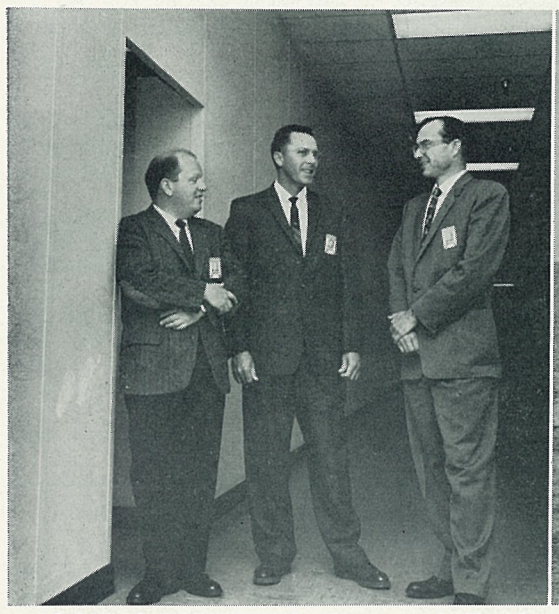
H. L. Copeland was on hand to hear the news, as were **H. K. Shirley, J. A. Moody, Art Saastad, Wilma Early, D. F. Nichols, A. R. Evans, E. C. Frankoski, M. E. Sheski, H. A. Vasques, H. B. Jenkins, Eugene Swindell, J. B. Porter** and **B. G. Anderson.**

About that time an IBM 704 computer was added to the system for the first real-time impact prediction, and during 1957 special filters and operational controls were incorporated to improve tracking under adverse flame attenuation effects.

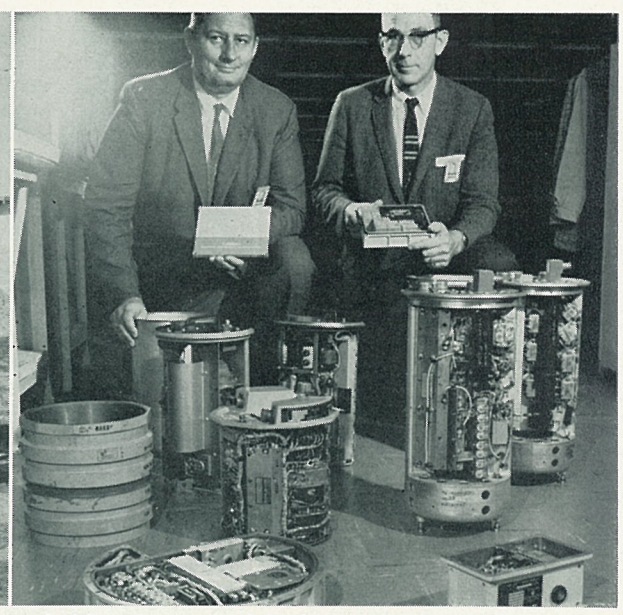
Joining the Azusa team now were **T. R. Woods, Valerie Knettle, J. H. Getz, George Goddard, W. P. Uerkvitz, F. W. Shaw, G. W. Moses, S. R. Zanin, L. G. Karel, R. E. Fixen, R. A. Grygar.**



TIGERS — Not all members of GD/Astro Mercury "Tiger Team" (special group that followed Cooper's Atlas from beginning) were at Cape Canaveral for shoot. Here are five whose job was done when missile left home plant. But they shared elation of other Tiger teammates, as well as that of all GD/Astro folk who contributed. From left, C. D. Fikes, K. G. Kover, R. S. Pappa, T. N. Bennett, J. Cooney.







LOOKING BOTH WAYS—In center is Florida "memoir," photo of team at Cape Canaveral, many of them veterans of program, who installed Azusa Mark II. Radomes are in background. At right are Jim Crooks and Bob Weaver, co-inventors of Azusa system, with Weaver holding latest model of transponder. In foreground are others which figured in system's evolution. In photo at left, R. J. Jacobs, Sam Combs, M. M. Cox, Azusa program, discuss bright future of tracking systems.

Convair Son Wins Audition

A 17-year-old General Dynamics/Convair son, Larry Laffoon, has been selected as one of the 15 outstanding viola students in the country to receive special instruction at Michigan State University, East Lansing, Mich., this summer under sponsorship of the American Federation of Musicians.

Altogether, 100 young people from throughout the U. S. and Canada, all performers on string instruments, will attend the fifth annual Congress of Strings, June 23-Aug. 17. Tuition, living expenses, and transportation is paid by the Federation.

Larry, son of Mary Laffoon of Dept. 23, won the San Diego audition held under auspices of the local Musician Association last month. He will have the opportunity of studying under personal direction of the New York Philharmonic Symphony's viola soloist.

A student of the viola since he was in the fifth grade, Larry's talent has been so evident that he has been sponsored as a protege of the San Diego Associated Artists the last two years, with cost of lessons defrayed by the group. This assistance is extended for the coming school year.

He graduates this June from Hoover High School and will enter San Diego State College this fall on a music scholarship from the college.

GD/E Softball Team Eliminated in Finals

GD/Electronics softball team had a 6-won, 2-loss record before it was washed out in elimination for finals of the City Preseason Tournament.

Victories were scored over Golden Arrow Dairy, 6-0; IBM, 5-4; Ryan Aeros, 4-0; Naval Supply, 3-0; Linda Vista Cafe, 3-2; American Legion, 2-1. GD/E went down before Tamale Kings, 3-0, and NAS Packers, 4-3.

Outstanding performances were turned in by Blackie Blackwell and Ken Farnsworth, pitchers; Norm Dahl, catcher; Marv Oliver, third baseman; Jack Barbieux, shortstop.

Huey Crawford had high batting average with .385 in 26 times at bat. Barbieux held a .304 for 23 times at bat and Oliver, .286 in 21 turns at home plate.

Road Runners Revisit CRA Pinecrest Site

Road Runners will return to Pine Crest, CRA's mountain resort, for a summer weekend, June 14-15. The trailer group was one of first activities to enjoy newly-opened area, near Julian, early this year.

Election of officers and judicial board will be held on Saturday afternoon. Carl Scholl is in charge as wagonmaster, assisted by Lee Kunkle.

This month's outing to Deerhorn Valley Lodge brought out 43 people in a dozen trailer units the weekend of May 17-19. Several birthdays and anniversaries were observed and members gathered for square dancing Saturday night in the lodge.

First-Flight Covers On Sale at GD/Convair

A few rare first-flight covers commemorating initial flights of Convair planes are now available at GD/Convair employee services, Bldg. 32, Plant 1.

The covers, supplied by Commissioner Jack Benedict of the CRA Stamp Club, were carried aloft on first flight of the XP5Y-1, April 18, 1950; Convair-Liner 340, Oct. 5, 1951; and Convair 880, Jan. 27, 1959.

General Dynamics' collectors may buy them for 25c each as long as the limited supply lasts.

More Finish Value Course

Twenty-five more GD/Convair men from all departments completed the full workshop value control course in seminar No. 15, running from May 6 through May 17.

Projects of the five teams, individuals, departments, and project leaders were:

Team No. 1—Jungle Jenny Tracker: F. E. Reed (115), D. S. Lauder (97), R. Miranda (25-4), W. D. Mitchell (6-2), H. P. Williams (48). Project leader, J. J. Zyirek.

Team No. 2—C-141 Skin Trim Tools: Willard Martin (131), M. A. Mayall (6), R. F. Schweitzer (400), D. D. Strange (6), L. W. Turner (3). Project leader, Zyirek.

Team No. 3—GEM Documentation: M. Formanek (34-2), H. E. Hainley (6), J. P. Spieker (6), F. F. Stevens (171), G. W. Vance (16). Project leader, Nick Kosmas.

Team No. 4—C-141 Clips, Clamps and Bracketry Installations for Tubing and Harness: O. J. Ohlsson (93), Don Bryson (140), G. J. Kincaid (6), Walt Bowe (15), Jim Nelson (6). Project leader, Ken C. Atkin.

Team No. 5—Torque Tube Probe—F-106 Supersonic Ejection Seat: A. D. Rinaldi (15), J. M. Hudson (6), R. J. Archibald (34), T. J. Condon (6), H. G. Rexroad (141). Project leader, Atkin.

70 Pct. Goal Set For Bond Buying

(Continued from Page 1)

campaign, with payroll deduction authorization cards distributed through supervision to all employees not now participating. Additional cards will be issued to current bond buyers with the hope that individuals will authorize larger bond deductions.

Currently, GD/Convair leads in percentage of participation, with 56 per cent of employment buying bonds regularly at the rate of an average $7.88 deduction per week. GD/Astronautics has 45 per cent participation and a average weekly deduction of $7.21. At GD/Pomona the participation is 40 per cent with a $7.18 average weekly deduction, while GD/E-San Diego's participation is 35 per cent and weekly saving average is $8.62.

GD/E Wives to Meet Thurs. at Kona Kai

Next monthly luncheon for GD/Electronics Wives Club has been set for Thursday (June 13) at Kona Kai Club.

Social hour will start at noon with luncheon served at 1 p.m. Price, including tax and tip, is $2.50. A door prize, provided by CRA, will be given.

Members are welcome to bring guests, said Mrs. J. W. Swank, hostess for the June get-together.

All reservations must be called in by June 10 to Mrs. Swank, 264-6726, or to Mrs. G. W. Leesch, 582-1363.

Jim Lawton Holds Club Champ Title

James Lawton of GD/Electronics emerged winner of the recent Singing Hills Club Championship tourney, winding up the finals with a 1-up on 19 holes.

During the four-week handicap tournament, Lawton took the first round also with a 1-up on 19 holes. The second week he won 3 and 2; third, 6 and 5.

His will be the first name inscribed on the club's new permanent trophy. Personal trophies were a cup and a blazer bearing the club emblem.

Water Skiers Invited To Join In Activities

Water skiers, or those who would like to join in the fun, are urged to take part in activities of CRA Water Ski Club.

All GD/Convair and GD/Electronics people are welcome to participate, said Commissioner Gene Sevigny. Instruction is given beginners.

Although weekend skiing is scheduled at present on a phone-call basis, regular sessions will be planned as soon as enough turn out. For information call Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Deadline Approaches For Mexico Trip

This is the final week for General Dynamics travelers to sign up for the specially-arranged summer trip to Mexico.

Deadline for registration and deposits, $35 per person, is this Saturday, said Jim Hardison, GD/Convair Dept. 15, conducting the tour.

Trip dates are Aug. 16 to Sept. 1. Travel will be by air-conditioned train from Mexicali to Mexico City, and bus to Acapulco. Entire cost of the two-week tour is $350.

Full details are available from Hardison, 276-5805, evenings.

New Guppy Strain Wins for Fountains

A new strain of tropical fish developed by Alice Fountain, wife of GD/Convair's Everett Fountain (Dept. 131) won the blue ribbon for color at the Southern California Guppy Show in Long Beach last month.

The "Fountain Half-Black" guppy won the judges' decision over at least 50 entries from a dozen states.

Lou Canter to Lead Conference Session

Lou Canter, manager of library and information services at General Dynamics/Astronautics, will serve as chairman and moderator of a Special Libraries Association session June 9-13 in Denver.

Canter will preside over a session on Government Information Services. Panelists include top government and service information and library specialists.

Canter is president of the San Diego Chapter, Special Libraries Association.

Shooters Turn Out at Gun Range For First 100-Bird Skeet Event

Thirty shooters from throughout Southern California competed for prizes in the first registered 100-bird skeet event sponsored by CRA-ARA Gun Club May 5 at Gillespie Field Range.

The invitational club shoot was the second NSSA registered shoot held by the Gun Club this year, and two more are scheduled. However, the others are 50-bird events, explained CRA Commissioner Jack Swank.

"We were pleased with the turnout," said Swank, "especially on the part of the ladies. We had four entered in this shoot, with one taking a second in her class. We'd very much like to have more of the fair sex trying their skill against the men."

Championship title went to John Fellows of Compton with a score of 99 out of 100 in the shoot-off.

Other winning marksmen were: Class AA-A—Homer Reed of El Cajon, first; Jim Dominca of Torrance, second, both with 99s. Class B—Ed Heilbron, first, 95; Alan Kest, second, 93. Class C—Robert Beckett, first, 96; Don Cost, second, 92; Class D—Wayne Olson, first, 97; Tom Hodgson of San Clemente, second, 94. Class E—Lester Nash, first, 89; Irina Reed, second, 85.

Mrs. Reed was lady champ with 85 and Lois Cullmer, runner-up, with 84.

Engraved bronze belt buckles went to first-place winners and other prizes to runners-up.

★ ★ ★

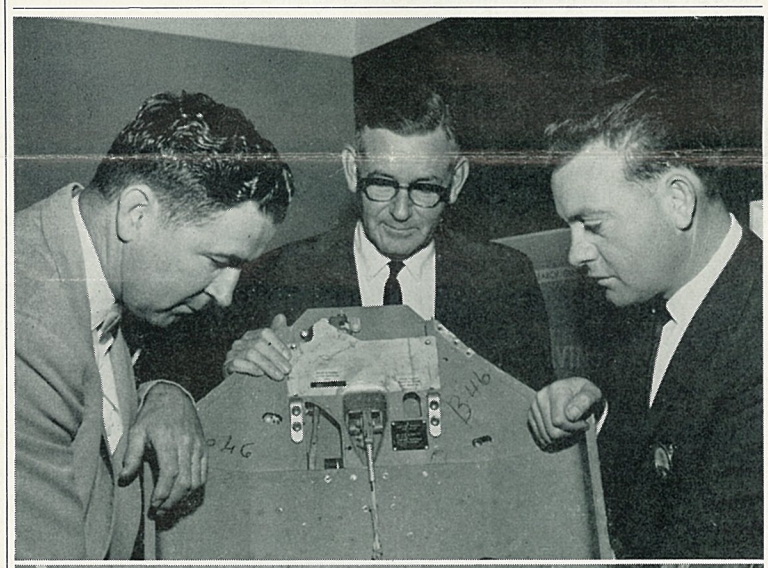
Winners of the registered ATA trapshoot held May 19 were: 16-yd. event—Class A, Jack Rogers of GD/Convair, 81; Class B, Robert Cushman and Roy Coward tied with 95s out of a possible 100. Cushman won the shoot-off with 25 straight.

Class C was won by A. T. Higginbotham, 94; Class D, George Skurla, 98; Ed Barrett of GD/Convair took the handicap event with a 93. Donald Jones was runner-up with 92. Ellis Rhodes topped the doubles event with an 84.

Midge Higginbotham won the ladies' crown after tying with Lois Smith with 96s.

This Friday night (May 31) the CRA-ARA club will sponsor a Troy-type trapshoot at the range at 7:30 p.m. Money accumulated during the last two Friday night trapshoots when no one broke 25 birds straight at 16-yds. or handicap will be put in the pot. Winners in each event will get $30.

Regular club matches will be held Sunday morning (June 2).





VALUE LINE-UP — Latest group to complete GD/Convair's continuing value control training form long row at close of 15th seminar May 17. At top are project leaders (from left) J. J. Zyirek, K. C. Atkin, and Nick Kosmas.

Syn Com Satellite Topic for AES Meet At IAS Bldg. June 6

Change in meeting place and speaker for the June 6 meeting of the Aerospace Electrical Society is announced by T. W. Ochodnicky of GD/Convair, San Diego Chapter president.

All members and interested General Dynamics people are reminded that the session will be held in the IAS Bldg. on Harbor Drive at 7:30 p.m. next Thursday.

Design and mission of Syn Com I and the advanced Syn Com satellite will be discussed by L. A. Gustafson, assistant manager for the advanced Syn Com project at Hughes Aircraft's Space Systems Division, Culver City.

Gustafson, who replaces D. C. Worden, formerly of GD/Convair, as main speaker, also will show color and sound movies and slides of the commercial version satellite's mission. Hughes is building the Syn Com under contract to NASA.

"We are particularly anxious that all GD people make an effort to attend this pertinent meeting," said Ochodnicky. "We are most fortunate to be able to present this type of program to keep our engineers apprised of the 'state of the art' of such advanced aerospace programs."

Information is available from Ochodnicky, GD/Convair Plant 1, ext. 1164; James Carlson of GD/Astro, AES publicity chairman, Plant 1, ext. 2607; or Harvey Seibert, AES program chairman, at Astro Plant 71, ext. 2007.

Astro Golfer Tops IRC Links Tourney

Dan Scott of GD/Astro took the championship flight and 10 other General Dynamics golfers were winners or runners-up in their divisions in finals of the annual Industrial Recreation Council golf tournament held May 4-5, 11-12 at Torrey Pines.

Altogether 81 of the 224 entries from San Diego companies were from GD—57 from GD/Astro; 13, GD/Convair; and 11, GD/Electronics.

Norm Dahl of GD/Electronics won the trophy for first flight; Gene Pollpeter of GD/Convair took the third flight.

Bill Cody of GD/E defeated Bill Ruzich of GD/Astro in the seventh flight. Gene McEachern of GD/Astro took the ninth flight. Jim Hearn of GD/E defeated Chet Kruk of GD/Astro in the 11th flight; Henrik Eskesen of GD/Astro defeated Jim Rose, also of Astro, in the 12th flight; and Glenn Smith of GD/Astro was 13th flight winner.

Salvage Yard Sked Set for Four Weeks

Salvage yard schedule for the next four Saturdays at GD/Convair and GD/Astro sites is:

GD/Astro—June 1, 15.

GD/Convair—June 8, 22.



NEW SERVICE SHOP — CRA Sports Car Club members proudly look over handiwork at completion of garage facility at Gillespie Field. Right shot shows interior of modern 25x50-ft. building with equipment installed. Standing, from left, are J. K. Field, manager of personnel services; Gerry Wright, CRA commissioner; Al Cooper, Fred Thatcher. In center photo, Wright sits in his Jaguar XKE roadster under new club emblem gracing the doorway, with Thatcher at left and Cooper at right. In shot at left Steve Field stands under his MG-A on wooden ramp positioned outside garage for oil draining and chemical cleaning.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

ARCHERY — Club shoot Sunday (June 9) at Balboa Park Field Range.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All GD people welcome.

CAMERA CLUB—Joint CRA-ARA meeting and model shoot June 2, 7:30 p.m., Photo Arts Bldg., Balboa Park. Model will be "Miss Photorama."

FISHING — Potluck dinner, 6:30 p.m.; meeting, 7:30 p.m., June 18 at Gillespie Field Clubhouse.

GARDEN CLUB—Joint CRA-ARA meeting June 5, 7:30 p.m., ARA Clubhouse. Plant exchange.

GLIDER CLUB — Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1.

GOLF — CRA tournament June 8-9, Rancho Bernardo course.

GUN CLUB — Troy-type trapshoot Friday (May 31), 7:30 p.m. Regular club rifle, skeet, trap matches Sunday (June 2), Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children under 12, 25c.

PISTOL CLUB — IRC pistol division of annual gun shoot hosted by CRA group June 9 at San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (May 30), 8 p.m., Harbor Drive club headquarters.

RIDING CLUB — Memorial Day weekend trail ride and campout, May 31-June 2. Start at The Willows, near Alpine, at 10 a.m. Friday.

ROAD RUNNERS — Weekend outing to Pine Crest recreation area June 14-16.

ROCKHOUNDS — Rockhound Shack at Gillespie Field open Wednesday nights from 7-9 p.m.

SOFTBALL — Plant "slow pitch" league play starts next week, John Adams Playground, 35th and Adams Sts.

STAMP CLUB—Meeting June 6, 7:30 p.m., Convair executive dining room, Pacific Hwy.

VOLLEYBALL — Play Wednesday and Thursday evenings, Muni Gym, Balboa Park.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

GD Men Installed National Officers Of Writers Group

L. J. Solheid of GD/Convair and Charles W. Thelen of GD/Fort Worth were installed as national officers of the Society of Technical Writers and Publishers at the May 16-18 annual convention in Boston, Mass.

Solheid, service publications supervisor at GD/Convair, was seated as second vice president, and Thelen, GD/FW engineering publications supervisor, as treasurer for his second consecutive term. Before the recent election, Solheid had served as a national director of the Society since 1959.

At the San Diego Chapter level, the entire slate of offices will be filled by General Dynamics people for the coming term, starting in June.

Newly-elected chairman is E. S. Bill; vice chairman, Miles Gordon; treasurer, Walter E. Brees, all of GD/Astronautics publications quality assurance. Betty Valin, GD/Convair publications editor, is new recording secretary; and Bernice Lundquist, GD/Astro publications assistant, corresponding secretary.

CRA Bowmen Win Shoot

Two bowmen from the CRA Archery Club walked away with top spots in the Champ Class at the fifth annual invitational shoot of the Valley Bow Hunters at La-Verne early this month.

Rube Powell was first with a score of 975 and Bob Lorch, second, 972.

In the Ladies' Champ Class Frankie Smoot of the Convair group took second. First place was won by Marie Stotts, current national woman's champion.

The Convair Archery Club will feature 14 field targets and 14 black-face hunter targets at its June 9 shoot at the Balboa Park Field Range to prime local bowmen for the California State Shoot the next weekend in Sonora.

Old Convair Pins And Medals Sought

CRA Coin Club is putting out a call for Convair pins and medals to be used in the club's numismatic display at the coming Del Mar Fair.

Specific items needed are Consolidated Vultee service pins for 5, 10, 20, 25 years; Consolidated Aircraft 10 and 15-yr. service pins; tie tacks and lapel pins marking the F-106, B-36, B-24, and other Convair planes in the pre-jet era; F-106 medals.

Call G. H. Stewart, ext. 1602, Plant 1, or at his home phone, 277-8636, evenings, before June 20.

Stewart, who is in charge of the display, assures donors that all items will be returned.

Joe Williamson Wins .22-Cal. Police Course

Joe Williamson (Dept. 401) won the CRA Pistol Club's .22-caliber Police Course with a 296 in May 12 competition.

Vern Mardis of Dept. 34 was second with a 289 and Jim Halfacre (Dept. 140), third, 287.

Halfacre, Mardis and Williamson switched spots in the Centerfire Short National, with only a point difference between each of the three top places. Halfacre shot a 257; Mardis, 256; and Williamson, 255.

The CRA group will sponsor the pistol division of the annual IRC gun shoot June 9 at the San Diego Police Pistol Range.

"SLOW PITCH" SOFTBALL GAMES SET NEXT WEEK

GD/Convair and GD/E teams will kick off the plant "slow pitch" softball season next week at John Adams Playground field, 35th and Adams Sts.

Doubleheaders are scheduled for June 4 and 6. Game times both nights will be 6:45 and 8:20 p.m.

GD/E and Autonetics Golfers Even Out in Friendly Battle

Golfers from GD/Electronics and Autonetics Division of North American gathered May 11 for friendly inter-company rivalry on the links with results even enough to please everyone.

General Manager John Lombardo headed the 24 upholding GD/E's honor at Singing Hills course, site of the match. Autonetics project engineers, Don Findley and Walt Mazur, spurred on the contingent of 20 Anaheim visitors.

Individual scores based on the Calloway handicap scoring system placed Donald Illeman in first spot for the GD/E team with a net 71. Heading Autonetics golfers was John Soderling with 71.5.

Ellsworth Henderson of GD/E was second with a 72. James Lawton of GD/E and Chuck Kincaid of Autonetics tied for third with 73s.

Trophies to first-place winners and prizes for runners-up were handed out at the buffet luncheon following the match at Foothills Athletic Club in El Cajon. In charge of arrangements were Bud Cooper and Howard McCray of GD/E and Don Johnson of Autonetics.

Both teams enjoyed the golf competition so much that they say other GD/E vs. Autonetics matches will be planned in the future with Autonetics hosting the next.



WINNAHS! — Happy winners of first GD/Electronics and North American Autonetics links match garner trophies. From left are Don Illeman, tops for GD/E; Ellsworth Henderson of GD/E, second; John Soderling, first for Autonetics team; Bob Davidson, Autonetics, winner of A3J model in blind bogey drawing; and Chuck Kincaid of Autonetics who tied with James Lawton of GD/E for third.

New Auto Maintenance Shop For Sports Cars in Operation

CRA Sports Car Club's new maintenance shop at Gillespie Field was dedicated the afternoon of May 18 with fanfare, an unveiling ceremony, and sighs of relief from hardworking members.

J. K. Field, manager of personnel services, pulled the cord to reveal the club's emblem on the outside of the building, signalling an open house inspection by members and guests. The emblem was designed by Hank Callihan (Dept. 6).

CRA Commissioner Gerry Wright and Lou Barnes, club president, praised members for their unparalled support in giving Saturdays, Sundays, and evenings to bring the club's dream of a shop facility to reality.

Eleven weekends of strong-arm labor went into the project from the time the 25x50-ft. sheet metal small boat building was turned over to the club by CRA.

Work began March 9 with the digging of a pit, 20x6x3 ft., and the laying of a one-inch air line from the boatbuilding compressor.

Now, the modern shop stands complete with concrete floor, machine shop and servicing equipment installed. (Biggest shove was the pouring and finishing-off of 18 yards of concrete in 5½ hours one Saturday afternoon.)

Equipment in operation includes such major items as a quick change engine lathe, metal-cutting bandsaw, 25-ton tool room screw press, floor-type drill press, bench grinder, high-pressure and hand lubrication equipment, gear lube dispenser, bearing packer, wheel balancer, tune-up console, wheel alignment equipment, industrial sewing machine, and a wide range of miscellaneous tools.

A wooden ramp, designed by Clark Kerr, Dept. 6 mechanical designer, is located at the west side of the building for oil draining and chemical cleaning. A commercial lube hoist will be installed at the south side to supplement the ramp. Other plans include an automobile paint booth next to the shop.

Fred Thatcher, GD/Convair facilities engineer, laid out the plans for the garage and directed construction with advice of Frank Marchant, caretaker at Gillespie Field. Thatcher acts as garage superintendent and will help anyone needing instruction.

Use of the shop and equipment is limited to Sports Car Club members who have qualified for club membership by owning a sports car. Dues are $4 a year.

At present, shop hours are from 8 a.m. to 5 p.m. on Saturdays and Sundays by appointment. Access to equipment may be arranged by contacting Thatcher at Plant 1, ext. 639, or evenings at his home phone, 295-1179.

A nominal service charge is levied to take care of replenishing supplies. Chassis grease, gear lube oil, wheel bearing grease, and waterproof pump grease will be sold on a cost basis. Members will supply their own brand of engine oil.

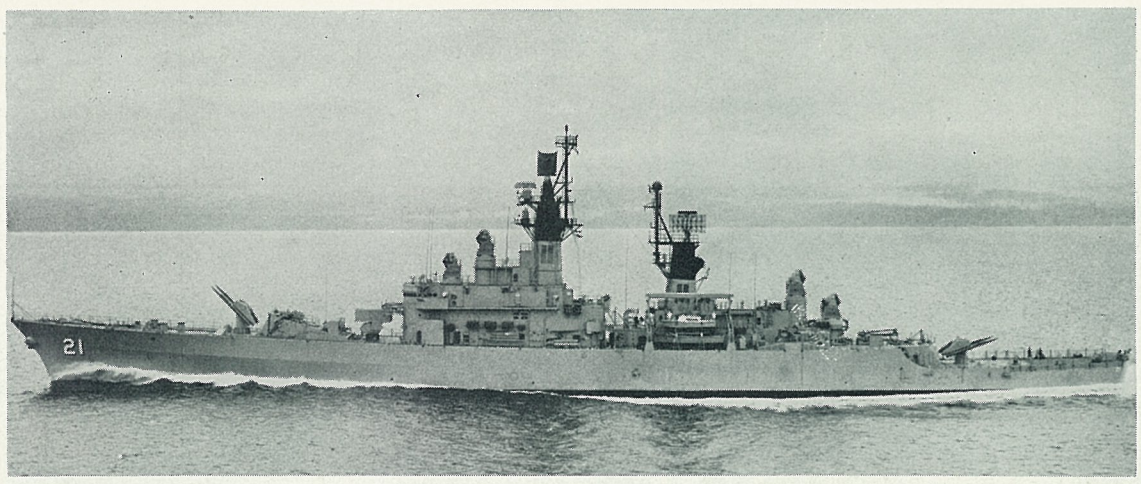
The shop was running full time the first day it was open for operation on Sunday (May 19). Five members completely serviced their cars under direction of Thatcher.

New Disney Cards Are Now Available

New Disneyland Magic Kingdom Club cards now are available for GD/Convair and GD/Electronics people at employee services, Bldg. 32, Plant 1.

Family membership cards are good for one year, from June 1, 1963, to May 31, 1964. Former cards expire this week.

They allow special discount rates at Disneyland park, Disneyland hotel and golf course.



NAVY'S NEWEST — USS Gridley (DLG-21), armed with GD/Pomona-built Advanced Terrier missiles fore and aft, is shown during sea trials. C. D. Perrine Jr., executive vice president, represented company at commissioning ceremonies Saturday (May 25) at Puget Sound Naval Shipyard, Bremerton, Wash.

DYNAMICS RECEIVES SILVER MEDALLION AS AVIATION GIANT

General Dynamics was among 40 giants of the aviation industry to receive silver medallions from Aviation Space Writers Association for having served the industry for over 25 years.

Frank W. Davis, GD/Fort Worth president, accepted the award on behalf of Roger Lewis, Dynamics' president, at a banquet May 21 at Adolphus Hotel in Dallas.

The nostalgic tribute to aerospace included a slide collection showing aircraft manufactured in 1938, the year AWA was established.

Columnist Bob Considine was master of ceremonies at the banquet.

GD/Pomona's Sinks Addresses Institute

G. H. Sinks Jr., General Dynamics/Pomona manager of employment, spoke April 26 at a spring institute of International Association of Personnel in Employment Security held in Pomona. The institute was co-sponsored by University of California at Los Angeles.

Theme of the two-day institute, attended by 400 persons from 60 state employment offices in Southern California, was "Place of Employment Services in the Community." Included in discussions were representatives of labor, industry and education.

Newest Navy Warship Named For 'Fire When Ready' Gridley

The guided missile frigate Gridley (DLG-21), third ship of the fleet to be named in honor of Capt. Charles V. Gridley, USN, was commissioned Saturday (May 25) at the Puget Sound Naval Shipyard in Bremerton, Wash.

The Gridley is the 14th Advanced Terrier-armed frigate to be commissioned. General Dynamics/Pomona-built Advanced Terrier missiles also arm six cruisers and two carriers.

GD/Pomona was represented at the commissioning ceremony by C. D. Perrine Jr., executive vice president. Perrine, on behalf of the company, presented the ship with a set of ceremonial quarterdeck stanchions, modeled after the Advanced Terrier missile.

Captain Gridley, for whom the ship is named, distinguished himself "beyond all praise" during the Battle of Mobile Bay on Aug. 5, 1864, shortly after his graduation from the Naval Academy. Serving on board the steam sloop-of-war Oneida off Mobile, Ala., he had charge of the master's division and assisted in conning the ship from the topgallant forecastle during the battle.

However, Captain Gridley was to gain everlasting renown later at Manila Bay as commanding officer of the protected cruiser Olympia, flagship of Asiatic Squadron. Adm. George Dewey's squadron stole past the batteries on Corregidor and arrived off Manila Bay near daybreak on May 1, 1898.

Admiral Dewey in his autobiography recounts: "At 5:40 when we were within a distance of 5,000 yards, I turned to Captain Gridley and said, 'You may fire when you are ready, Gridley.'"

Captain Gridley personally conducted the gunfire throughout the battle which ended in destruction of Spain's Philippine Fleet. He was on his way home when he died at Kobe, Japan, June 5, 1898.

GD/E Exhibits S-C Printer

General Dynamics/Electronics-San Diego demonstrated its S-C 3070 Electronic Printer at the Spring Joint Computer Conference in Detroit, Mich., last week.

The S-C 3070, designed for office, communications, or computer centers, is capable of printing a character at a time at speeds up to 5,000 words per minute.

Utilizing an electrostatic process, the non-impact printer produces legible permanent copy which can be used as a litho master to produce multiple copies for office distribution. The printer operates on-line or off-line with digital computer systems and is compatible with most available data transmission terminals.

Representing GD/Electronics at the May 21-23 conference were N. E. Frawley, industrial requirements assistant manager; D. O. Brending and H. G. Cooper, requirements representative; S. R. Viejo of requirements research; J. H. Gurley, manager Army requirements; Ron McClure, senior field service representative; Payne Johnson, manager of communication, and Helen Wood of communication.

Dynamics Exhibit Sent To Paris For Air Show

General Dynamics products will have a prominent place next week when the 25th Paris International Air Show opens (June 7-16) at Le Bourget airport.

Demonstrations of swing-tail cargo loading using a Canadair-built CL-44 turboprop transport will be a feature. Another Canadair airplane, the CL-41R advanced systems trainer, will be on display and GD/Convair-built F-106s also are scheduled to take part.

Among exhibits will be one from GD/Pomona, marking that division's first participation in the show.

Both Tartar and Mauler will be featured. A booth, with 30-foot front, will occupy an area covering 60 square meters in the missile section of the show.

Shown will be a Tartar display and a ⅛-scale model of Mauler weapon system. The Mauler model has a movable launching unit and simulates missile firings.

Tartar is the compact supersonic anti-aircraft missile produced by GD/Pomona for the U. S. Navy. The Navy announced last November that Tartar missiles initially will serve at least four other navies of the Free World—Italy, France, Japan and Australia.

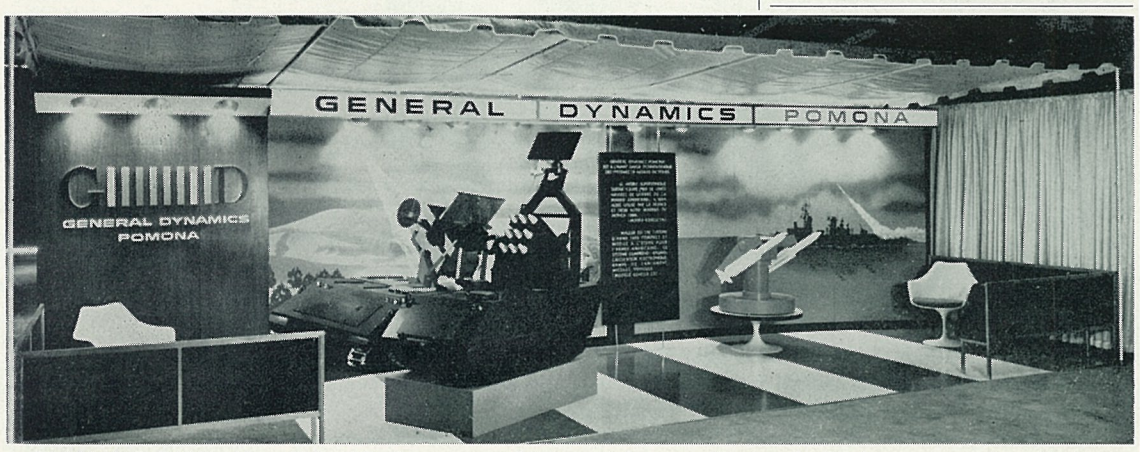
Mauler is the air defense guided missile system currently being developed at GD/Pomona for the U. S. Army. Self-contained Mauler is designed for forward area air defense with capability against high performance aircraft and short range missiles of the type likely to be encountered on future battlefields.

Manual Published By Convair Editor

"Programmed Instruction — Training Manual" has just been published by J. D. Meacham, GD/Convair publications editor, after more than a year of research.

The manual is pointed directly to the "workers" in the field, such as instructors, programmers, editors, training directors, technical writers.

The 230-page loose-leaf book was printed in GD/Convair graphic reproduction and is available from J. Ravin Publications, 4215 Calavo Dr., La Mesa, Calif.



DYNAMIC DISPLAY — This GD/Pomona exhibit will be on display in Paris next week, offering a capsule introduction to such products as Terrier, Tartar and Mauler.

Ex-Patrol Boat Serves In GD/Astro Research

Sound and the sea are subjects of continuing research carried on by General Dynamics/Astronautics in Southern California coastal waters.

Heart of the research effort is "Rorqual," an 83-foot floating laboratory, originally a World War II Coast Guard patrol boat, later converted for use as a private yacht.

After its acquisition by GD/Astro, the boat was fitted with specialized electronic equipment (in addition to extensive navigational and communication gear, radar and depth sounder already on board).

Research utilizing Rorqual is aimed at acquiring data on transmission of oceanographic problems associated with underwater communication. Studies are related to work on advanced missile system programs now under way at GD/Astro under Project Engineer Kerry E. Coughlin, Dept. 580-4.

A small boat, carried aboard Rorqual, is launched to serve as a platform and recording station for communication equipment which is lowered into the sea for tests at various depths under varied conditions. At the same time, associated equipment is lowered from Rorqual.

Rorqual is "home ported" at GD/Convair's ramp facility on San Diego Bay, and when under way is commanded by Coughlin or by Dr. C. G. McIlwraith, in charge of communication studies. R. E. Johnson normally handles electronic operations aboard ship.

Wynne Bowen serves as "chief of the boat"; Stan Hoyecki is engineer; and G. R. Cooke and W. W. Bacon Jr., round out the crew.

Rorqual's operations are directly supported by a shore-based electronics lab housed in a van at the ramp facility. Here, equipment is calibrated and repaired, and new test devices are constructed to meet growing program requirements.

Leon Resnick handles these related operations ashore, while Ben Swett serves as design engineer for special devices used aboard Rorqual.

George Brolaski, project operations manager, arranges for production of much of this specialized equipment in GD/Astro's main plant tooling department.

In the past, Rorqual has gone to sea for less than 24 hours at a time, although research operations of up to four days' duration and ranging from Dana Point southward to the international border are planned for the near future.

The boat is capable of sustained operations up to 2,000 miles round-trip with a crew of 10 on board.



ASTRO SAILORS — William Bacon and Wynne Bowen, members of Rorqual crew, are in foreground, as GD/Astro's oceanographic research vessel lies off seaplane ramp facility on San Diego Bay.

New Centaur Lighter Seen To Carry Heavier Payloads

Ozone difluoride, a substance whose maximum production is now one-third ounce per hour, is under study as a mixture with liquid oxygen to ignite such high-energy space vehicles as General Dynamics/Astronautics' Centaur.

Centaur employs an electrical ignition system because its propellants, liquid hydrogen and liquid oxygen will not ignite on contact.

National Aeronautics and Space Administration's Lewis Research Center which guides the Centaur program has issued a contract for further study on mixing liquid oxygen with ozone difluoride. Preliminary tests show that a tiny quantity of the latter will cause liquid oxygen to ignite immediately on contacting liquid hydrogen. Extensive testing of this phenomenon is currently in progress.

(At General Dynamics/Astronautics technicians in the propulsion systems design group of engineering are looking into this field along with others related to high-energy propulsion.)

Lewis Center's Donald L. Nored summarized work with ozone difluoride and its potential with that of hydrogen/oxygen.

He said that, using the Atlas-Centaur rocket vehicle as a booster, fluorine oxidizer in an upper-stage solar probe could carry a 25 per cent heavier payload than the oxidizer could manage. The payload capacity of a Mars orbit mission would be similarly increased with vehicles using fluorine.

Astro Chief Counsel On National Panel

H. Cushman Dow, GD/Astronautics chief counsel, has been named to the national panel, American Arbitration Association.



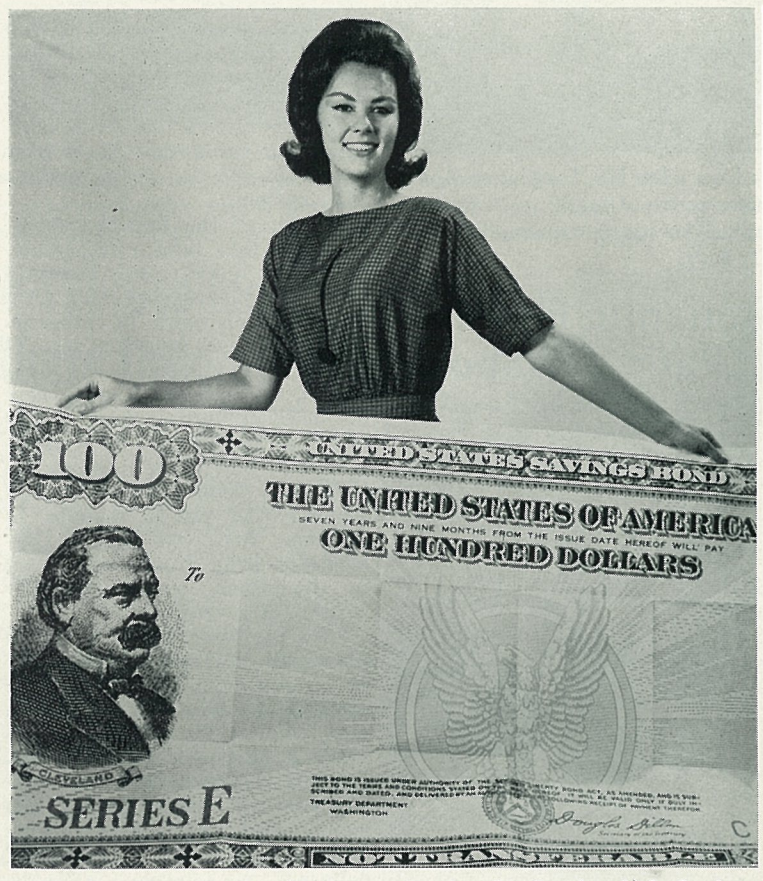
"Well today I learned that your arithmetic is lousy, too."

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 12 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, June 12, 1963



KING SIZE — Maybe this is carrying it a bit far, but U.S. Savings Bonds do produce king size values when held to maturity. GD/Astro's Georgia Lueth (Dept. 524-5) sets theme for current drive to increase bond buying by payroll deduction.

$$ Drawing to Climax Bond Sign-Up Drive

General Dynamics/Convair and General Dynamics/Electronics-San Diego join with other Dynamics divisions next week in an intensive drive to increase regular purchases of U. S. Savings Bonds by payroll deduction.

The campaign opens Monday, June 17, and extends through June 30. The goal is to increase regular bond purchases to 70 per cent of employment.

Roger Lewis, president of General Dynamics, has voiced a deep personal interest "in having our Corporation effectively support this effort," and division heads have taken similar stands.

"Regular savings through payroll deduction is not only good business for the country, it is good business for every individual," J. H. Famme, president of GD/Convair, and J. L. Lombardo, general manager of GD/Electronics-San Diego, said in a joint statement.

"Widespread purchase of bonds contributes greatly to a sound economy, and this is as important to us as national defense itself."

GD/Convair and GD/E will conduct separate campaigns, but they will be similar in organization and each will reward new buyers, as well as those who increase their allotments, with a chance to win bonds in a drawing during the first week of July, following the close of the drive.

Bonds totaling a maturity value of $125 will be awarded by drawing by GD/E, and GD/Convair will draw for bonds of a like amount.

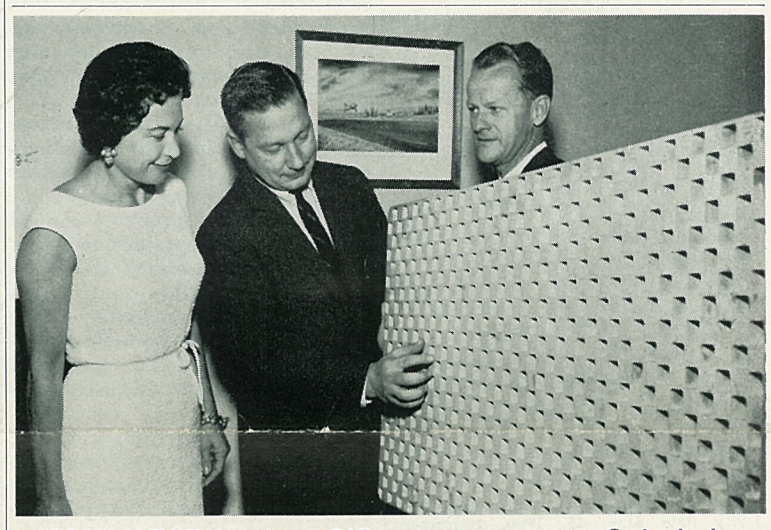


J. L. Lombardo J. H. Famme

All employees will be contacted through supervision during the drive, and issued sign-up cards either for authorizing bond-buying deductions, or authorizing increases.

"Uncle Sam is one of our best customers," Lombardo reminded, "and it is important that we support him in every way we can. This particular way — buying bonds regularly — is certainly no sacrifice, but is sound good sense."

"Thrift is not always easy," Famme added. "However, of all methods of saving, the easiest is by payroll deduction. I strongly advise you to participate for your own good and the good of the government."



CORE PREVIEW — Jean O'Connor, secretary to C. L. Jackson, SATS systems program manager at GD/Convair, W. H. Parry, general purchasing agent, and Jackson look over one of first pieces of SATS mats waffle-type aluminum core to arrive at GD/Convair plant.

New Options Offered to Users Of S-C Computer Equipments

General Dynamics/Electronics has announced new options for both its S-C 3070 electronic printer and its S-C 4020 computer recorder.

The new option for the S-C 3070 allows the user a choice of either 120 characters per line or the 72-character columns previously offered.

The new 120 character-line offers increased compatibility with existing computer systems and saves vital programing time for the printer user. The option consists of a new character generating tube which produces smaller characters, and minor changes in the printer's logic circuitry—all of which are internal changes in the S-C 3070 cabinet.

The expanded character-line option is available as a standard production item with the S-C 3070.

A new high density tape adapter for the S-C 4020 computer recorder allows the S-C 4020 to accept data from magnetic tape at input rates up to 62,500 six-bit characters per second, resulting

(Continued on Page 2)

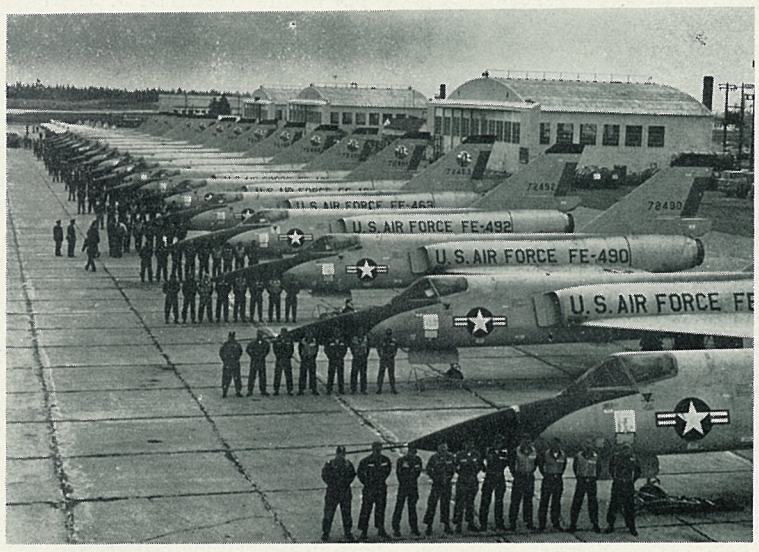
'Geiger Tigers' Trek to California Includes 17 GD/Convair F-106As

GD/Convair-built F-106As, based with the 498th Fighter-Interceptor Squadron in Washington, took part in a mass movement "Tiger Trek" as they were flown from Geiger Field the last of April at deactivation of the 84th Fighter Group.

The jet fighter interceptors, which had been at Geiger since the summer of 1959, were flown to Castle AFB, Calif., for modification. There they were exchanged for updated F-106s with vertical instruments which were flown to McChord AFB, Tacoma, Wash., where the 498th FIS will take up new residence in July.

Before "Tiger Trek" got under way the 17 F-106s, together with half a dozen jet trainers, were lined along the Geiger flight line for final inspection, reported T. S. Vaughan, GD/Convair field service rep with the 498th.

Col. Lester J. Johnsen, commander 84th Fighter Group; Lt. Col. Eugene L. Surowiec, commander 498th FIS; and Spokane Mayor Neal R. Fosseen reviewed planes and crews.



LAST REVIEW—Convair-built F-106As and crews of 498th FIS line flight line at Geiger Field, Wash., for final inspection before deactivation of 84th Fighter Group last of April.—USAF Photo.

Navy Awards Added Contract To GD/Convair

General Dynamics/Convair has received a $90,000 contract from the U. S. Navy Bureau of Ships in Washington, D. C., to continue development of a fail-safe stabilizing mechanism for hydrofoil craft.

GD/Convair study and design is directed specifically toward developing the mechanism for the Bureau of Ships' FRESH-1 experimental hydrofoil test vehicle.

The current award, for the second phase of GD/Convair development program first funded by the Navy in 1961, calls for advanced study and preliminary design with the final report due in February, 1964. The first phase was a feasibility study.

Craft using fully-submerged hydrofoils tend to be unstable in pitch and roll. On FRESH-1 this condition is corrected by an autopilot. The all-mechanical GD/Convair device is being designed as a fail-safe backup for the autopilot, but it may also prove effective as the sole means of control for other hydrofoil craft.

The GD/Convair stabilizing mechanism would be housed in the struts that connect the foils to the hull.

Three Gifts of $500 Voted For Charities

Three San Diego organizations received $500 each from GD/Convair Employees' Con-Trib-Club through action taken at the May 28 committee meeting.

United Jewish Federation of San Diego was voted a contribution for its current fund raising campaign. Other donations went to Volunteers of America and for YMCA campership.

Aluminum Core Units For SATS Field Arrive

First units of aluminum core developed especially for General Dynamics/Convair's SATS program have arrived at the San Diego plant for inspection and engineering acceptance. GD/Convair will use this new core in matting for a large test airfield under contract to the Naval Air Materiel Center, Philadelphia, Pa.

This 24x48-inch waffle type core is the largest surface area aluminum die casting ever made. It was produced for GD/Convair by the Doehler-Jarvis Division of National Lead Co., Toledo, Ohio.

C. L. Jackson, SATS systems program manager at GD/Convair, said, "The demanding load/weight requirements for the SATS landing field made our entire program depend upon the development of a very light, strong, and low-cost core. Results of this development by Doehler-Jarvis and the excel-

(Continued on Page 2)



GD/E LOBBY — Donna Galvin, GD/Electronics receptionist, signs in visitor in newly-decorated GD/E reception room, Bldg. 51 lobby. New vendors and visitors waiting room is attractive in bright, modern decor with pictorial display of GD/E products lining walls (far right). Reception room comes under responsibility of S. N. Garfi, traffic administration supervisor.

Log Book Entries



Gerald F. Cooper, Dept. 171, is latest General Dynamics/Convair man to receive 25-year service emblem.

Service Emblems

CONVAIR

Service emblems due during the period June 1 through June 15.

Twenty-five-year: Dept. 6-2, J. T. Greacen; Dept. 48-00, G. A. Covington; Dept. 131, D. P. Weaver.

Twenty-year: Dept. 14-4, Fred DeWitt; Dept. 48-78, A. N. Langston Jr.; Dept. 115, C. D. Monds; Dept. 133, K. E. Cook, C. C. Fitzgerald; Dept. 141, E. T. Graehl; Dept. 171, Adrienne C. Lemire.

Fifteen-year: Dept. 3-1, R. J. West; Dept. 6-4, R. H. Oversmith; Dept. 16-6, Dorothy T. McEwen; Dept. 41-1, G. W. Ashook; Dept. 42-1, T. J. Dunn; Dept. 91-4, Sarah B. Serio; Dept. 171, H. F. Hopkins.

Ten-year: Dept. 6, Jerome Hauser, R. R. Medico, D. E. Roberts; Dept. 14-4, Joe Giamanco; Dept. 16, H. F. Jeffries, G. H. Munkelt Jr.; Dept. 26-1, Nancy P. Young; Dept. 42-8, Lupe Blea; Dept. 90, J. J. Jodka; Dept. 400-2, R. L. Bolick.

GD/ELECTRONICS

Twenty-year: Dept. 72-00, R. J. Karash.

Fifteen-year: Dept. 90-00, J. W. Murphy.

Ten-year: Dept. 42-00, F. S. Acomb; Dept. 44-00, A. D. Mouser; Dept. 72-00, May Murray.

Retirements

CONVAIR

BELKONEN—John H., Dept. 401-5. Seniority date Feb. 10, 1941, retirement effective May 19, 1963.

BERESFORD—William M., Dept. 48. Seniority date Sept. 7, 1951, retirement effective April 19, 1963.

BITZER—Eugene F., Dept. 401-5. Seniority date Jan. 9, 1925, retirement effective June 3, 1963.

BRIDEN—Roy F., Dept. 34-1. Seniority date Feb. 9, 1953, retirement effective April 13, 1963.

GARBER—Henry M., Dept. 15-0. Seniority date Nov. 11, 1940, retirement effective May 20, 1963.

GRIFFIN—Ernest E., Dept. 129. Seniority date Oct. 27, 1952, retirement effective May 12, 1963.

HOWE—William H., Dept. 401-4. Seniority date Feb. 6, 1951, retirement effective May 29, 1963.

KELLY—Guy D., Dept. 99, Seniority date April 22, 1952, retirement effective May 30, 1963.

KEMPTON—Henry F., Dept. 16-6. Seniority date Nov. 1, 1961, retirement effective May 31, 1963.

LEWIS—William C., Dept. 6-30. Seniority date June 29, 1950, retirement effective May 30, 1963.

McGINLEY—Sheldon Sr., Dept. 21-1. Seniority date Sept. 10, 1956, retirement effective April 5, 1963.

RAE—William, Dept. 401. Seniority date Nov. 6, 1951, retirement effective April 19, 1963.

REINHARDT—Marguerite T., Dept. 133. Seniority date Feb. 4, 1952, retirement effective April 5, 1963.

RICHESON—Willie A., Dept. 48-11. Seniority date May 17, 1956, retirement effective April 22, 1963.

ROBERTS—Lloyd E., Dept. 204. Seniority date July 13, 1951, retirement effective May 21, 1963.

THAANUM—Faber W., Dept. 401-5. Seniority date July 7, 1951, retirement effective March 26, 1963.

VAN BUREN—Wallace B., Dept. 34-1. Seniority date Dec. 3, 1956, retirement effective May 10, 1963.

WHITE—Felix P., Dept. 115. Seniority date July 5, 1949, retirement effective May 31, 1963.

ZALUSKEY—Charles J., Dept. 48-78. Seniority date Feb. 16, 1956, retirement effective May 31, 1963.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending May 24 and May 31:

Dept. 101, L. Budzynski and H. M. Woodard, $5 each (joint award).

Dept. 115, L. H. Roberts, $11.

Dept. 119, J. Juanico Jr. and O. Mitchell, $5 each (joint award); J. Juanico Jr., $10; C. H. Stringfield, $10.

Dept. 128, P. A. Piraino, $19.10; B. F. Armas and R. F. Lanzo, $5 each (joint award); R. V. Lucero, $24.40.

Dept. 131, H. J. Komos, $26.30 (two awards).

Dept. 140, D. E. Knapp Jr., $740.45 (partial payment).

Dept. 171, A. M. Lintvedt, $10.

Cost Improvement Proposals for the same periods.

Dept. 115, F. E. Reed.

Dept. 131, W. M. Clapp.

AF Distributes Convair Text

A programmed instruction text, compiled at General Dynamics/Convair, has been released by the Air Defense Command as a special issue of ADC's "Interceptor" magazine.

"Aerodynamics of Sink-Rate" was prepared by GD/Convair's technical publications department to alert pilots of the operational characteristics of the power curve for delta and swept-wing aircraft and of the hazards they face if they get "behind the power curve," explained H. R. Kennedy, chief of technical publications.

Tests conducted at several ADC installations jointly by the ADC Chief of Safety and GD/Convair personnel showed that pilots increased their knowledge of high sink rate from a 56.8 per cent group average to 94.4 per cent after taking the step-by-step programmed instruction.

Pilots exposed were enthusiastic about the new concept of learning, with such typical comments as: "I liked the book—it held my interest." . . . "Prefer programmed book because you learn and retain more than in a classroom situation. Make more programmed books like this." . . . "The book was good. It made the subject more interesting and clear." . . . "Of all the methods of instruction, this is the best."

Increasing recognition of the new form of instruction within the educational field, by the military and industry indicates that programmed instruction does work, said Kennedy.

"More instruction of better quality can be given to more people with uniform results, in less time, and at reduced cost.

"And, GD/Convair's technical publications department has successfully demonstrated these results with the Value Control series of programmed texts now in use by General Dynamics divisions, the Navy, and a number of industrial companies," he continued.

A series of programs covering selected quality assurance subjects now are being developed by GD/Convair technical publications.

Road Runners Slate Pine Crest Outing

Road Runners will gather at Pine Crest, CRA recreation area, this weekend (June 14-16) for their monthly outing.

Election of officers and judicial board will be held Saturday.

Deaths

CONVAIR

FIREBAUGH—Albert M., Dept. 400-6. Died May 23. Survived by wife, Patricia, a son, and two daughters.

Rider-Driver

CONVAIR

RIDER-DRIVER WANTED—7:30 a.m. to 4:30 p.m. from North Clairemont to Plant 1. Norman Saslove, home phone 273-9233, or plant ext. 1115.

Lost & Found

CONVAIR

LOST—Gold necklace with cross mounted on gold pendant. Bev Lyons, Dept. 91, ext. 1901.

Personals

CONVAIR

We acknowledge with deepest appreciation the kind expressions of sympathy from Convair friends at the loss of Shirley H. Lester.

The Lester family.

General Dynamics NEWS

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GD/Electronics (San Diego) news contact: Helen Wood, 298-4641, ext. 1377, Plant 1, Bldg. 51.

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Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

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OFF TO PARIS—Air Force pilots from 48th FIS, Langley AFB, Va., before flight of Convair-built F-106s across Atlantic to Paris International Air Show. From left: Capts. Thomas P. Larson, Robert R. Sawhill, Lloyd E. Harsh, Gerald G. Bury.

F-106s Make Transatlantic Flight For Appearance at Paris Air Show

Two GD/Convair-built F-106s, first aircraft of their type to leave the limits of the North American continent, were viewed this month at the 25th Paris International Air Show.

Four of the Air Defense Command's latest jet interceptors were flown from Langley AFB, Va., late last month by pilots of the 48th Fighter-Interceptor Squadron. The two prime craft made the transatlantic route by way of Newfoundland, Greenland, Iceland, England to their staging base in Germany before arriving in France for the opening of the exhibit last Thursday, June 6.

The other two, used as back-up planes, stopped at Newfoundland. Maintenance men from both the 48th FIS and the 27th FIS at Loring AFB were stationed along the route to service the craft and 10 others were flown to Europe to handle servicing duties there.

According to L. M. Goodloe, GD/Convair field service representative at Langley, the two F-106s now on static display at Paris will fly high-altitude target runs for some of the F-102 squadrons in Europe.

Aluminum Core Units for SATS Field Arrive at GD/Convair for Inspection

(Continued from Page 1)

lent results in the first pieces of hardware make a major milestone, representing months of engineering research and design by our subcontractor."

New techniques had to be evolved in the development of the special die to obtain the high physical properties to withstand the heavy abuse from all types of aircraft on all kinds of soil. It required 25,000 die-making hours to build the two die assemblies.

In lauding Doehler-Jarvis for its achievement, W. H. Parry, GD/Convair general purchasing agent, said, "I have never seen a company with such a broad product line so completely involved in one single development. During the six months it took to develop and produce the initial sample, Doehler-Jarvis directed efforts of all its top personnel and resources towards this development. Emphasis started at the top level and engrossed everyone from the president on down."

Specifications for the aluminum core in support of the SATS program were developed by GD/Convair engineering. Manufacturing research developed the welding techniques which make possible the joining of two die cast sections providing optimum strength.

Doehler-Jarvis will supply 20,000 units of the 24-48-inch core. Two of these will be welded together for each mat, sandwiched in aluminum skins surrounded by special connector edges on GD/Convair's automated translator line. First production mats are due to start rolling off the line in mid-July.

Modifications to adapt the automated line for metal core assembly are nearing completion. Unique milling and welding machines, developed and built at GD/Convair especially for the SATS program, are installed in the line. Development of this equipment was under E. H. Damarus of tooling. Initial proofing of the line will start the latter part of this month.

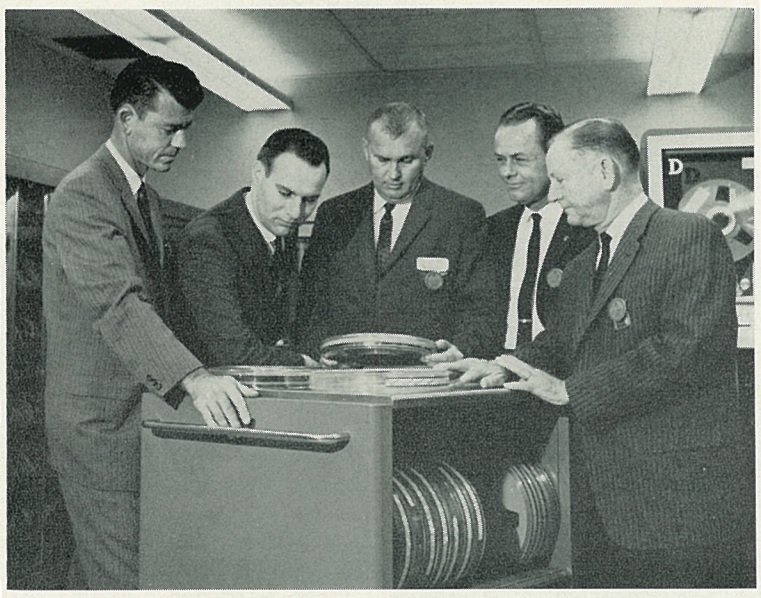
New Options Offered S-C Computer Users

(Continued from Page 1)

in minimum use of computer time for S-C 4020 tape preparation.

The unit, designated F-53, serves as a buffer to the S-C 4020 and its data source. The S-C 4020 converts and records digital output into combinations of curve plotting, line drawing, and character printing at speeds in excess of 17,000 characters per second.

The new adapter is compatible with IBM 729 and 7330 tape transports using high density tapes—those with 556 characters per inch.



LAST RUN — Final program is run on IBM 705 computer system as GD/Convair's data processing department converts to new IBM 1410. From left are J. J. Kelly, programing supervisor; Owen Ward, senior programer; G. O. Withem, chief data processing; B. V. Allen, programing supervisor; Charles O'Rourke, operations general supervisor.

Conversion to New Computing Units Finished

GD/Convair's data processing capability has stepped into a leading place among General Dynamics divisions and other industrial enterprises with complete conversion to the new IBM 1410 computing system.

Last program was run the last week in May on the now-obsolete IBM 705 which had been the brain of GD/Convair's data processing operations since 1958. Now, 250 basic programs have been converted for the more modern 1410 system.

In one of the fastest conversions of this kind ever accomplished by any firm, G. O. Withem, data processing chief, said that 20 man-years of program conversion were squeezed into 13 months.

And, since the 1410 units were not installed until January of this year, all testing for the conversion task had to be done at the IBM Data Center in Los Angeles for seven of the 13 months. In addition, there was only a five-month overlap from one system to the other, which generally takes over a year.

"We are very proud that the conversion program was completed on schedule, in spite of the difficulties involved," Withem said.

W. R. Bruce, director of operations, congratulated the department on accomplishing the monumental task in a short time to save the division thousands of dollars.

"We expect to save $200,000 in computer rental alone in 1964 as compared with rental paid this year," Withem predicted.

B. V. Allen, programing supervisor in charge of production systems, explained: "The fully-transistorized 1410 is as far ahead of the vacuum-tube 705 as a new jetliner is ahead of a piston engine biplane!"

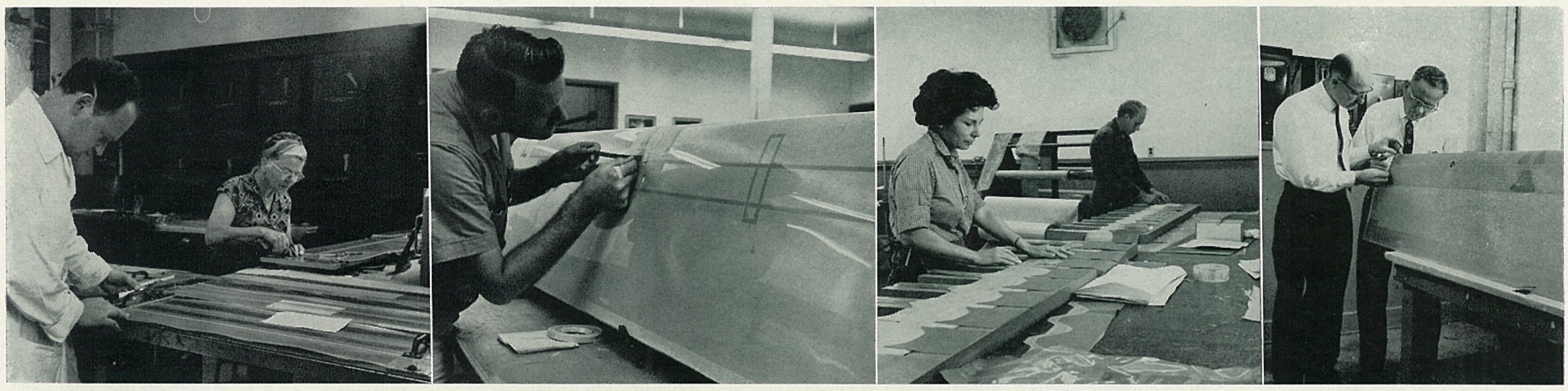
Its capabilities can be increased or decreased as desired merely by adding extra memory units, higher speed tape drive, storage discs, etc., allowing fluctuation to the constantlly-changing task load. Also, machine time required to process programs on the 1410 is about half that consumed by the 705.

The new techniques developed for testing and production systems are being passed on to other General Dynamics divisions to save the Corporation an additional several hundred thousand of dollars. GD/Pomona is already using the GD/Convair-developed techniques and GD/Astronautics, Electric Boat, and others are incorporating them or planning to use them in their data processing programs, said Owen Ward, senior programer.

It was necessary to retrain 35 programers and data processing personnel as well as employees in other departments who assist in providing program data. During this retraining and conversion, many improvements, simplifications, and standardization techniques were developed. For example, the GD/Convair paycheck stub was improved to furnish better information relating to wage deductions, explained J. J. Kelly, programing supervisor with responsibility for financial systems.

In a number of other reports and programs, methods of data accumulation and presentation were simplified and improved. The Master Material Parts Requirements as processed on the 705 required 16 reels of tape and took 3½ hours to run through the machine. The same data is now carried on three reels and is run off in 1¾ hours.

Withem stressed the cooperation of all departments using data processing services during the conversion period. "Their help in the task and acceptance of the limitations in performing new tasks is greatly appreciated. With the 1410 now fully operative, we are in a position to proceed with studies of program applications which offer systems improvements and cost reductions."



NEW CONCEPT — GD/Convair-developed process for fabricating all-fiber glass leading edges with integral heating elements for C-141 horizontal stabilizers includes production stages shown above: (1) Herta Teich welding nickel tabs on thin metal strips used as heating elements, and Howard Stanley bending up tabs. (2) R. E. Thompson marks center line on fiber glass tool for positioning of elements during laminating. (3) Mary Frescas and Jim Finleon cut fiber glass cloth to shape for build-up. (4) Les Boring, plastics assistant foreman, and Harry Rote, Dept. 129 foreman, check dimensions of heating element embedded in leading edge.

F-111 Cooling Units Ordered

A contract to develop and manufacture refrigeration units and temperature-control sets for the F-111 jet fighter has been awarded Garrett-Airesearch, Los Angeles, by GD/Fort Worth. The contract is in excess of $1 million.

(The contract is with Airesearch Manufacturing Co., a division of the Garrett Corp., both of Los Angeles.)

The contract calls for systems to be built for 23 aircraft and test packages for both the F-111A (Air Force) and the F-111B (Navy).

The airesearch system is a simple, air-cycle system which cools hot, pressurized air bled from the aircraft's two jet engines.

★ ★ ★

RADAR ALTIMETER CONTRACT PLACED

Minneapolis-Honeywell's Aeronautical Division has been awarded an $885,000 subcontract by GD/Fort Worth to design and produce low-altitude radar altimeters for the flight-test phase of the F-111.

Honeywell said the F-111 radar altimeter will be similar in design to a family of high-accuracy altimeters developed at the company's Seattle Development Laboratory and successfully flight-tested in a variety of aircraft.

A unique feature of the Honeywell altimeter, the company said, is leading edge tracking which eliminates doppler effect errors and signal averaging and permits accurate operation over ice and snow.

TITAN CONSIDERED TO BOOST CENTAUR

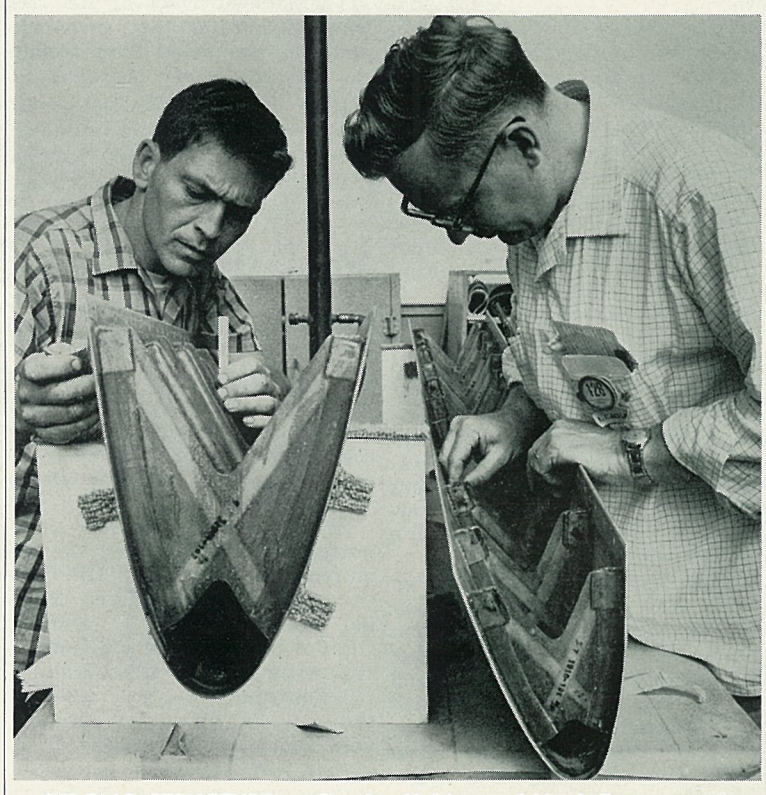
National Aeronautics and Space Administration's Lewis Research Center has issued a $325,000 study contract to Martin Company to determine if the Titan II can be adapted as a booster for the Centaur space vehicle.

Centaur is built by General Dynamics/Astronautics and is the nation's first high-energy rocket powered by engines burning liquid hydrogen and liquid oxygen.

Utilizing an Atlas first stage, Centaur is now destined to soft-land Surveyor spacecraft on the moon to conduct preliminary studies leading to manned lunar landings later during this decade. Research and development flights with this combination are slated for this year from Cape Canaveral.

Titan II, developing about 430,000 pounds of thrust in its first stage, will launch two-man Gemini spacecraft into earth orbit for periods of up to two weeks. NASA indicates a significant increase in payload capability could be achieved in a Titan II—Centaur combination.

Martin will submit preliminary design analysis; mission performance analysis; requirements for ground support equipment and launch facilities; and development plans including scheduling and funding as part of the study.



STRONG STRUCTURE — Charles Kahler and Hank Fenstermacher, both GD/Convair Dept. 128, clean terminals and metal clips inside completed fiber glass leading edge section before installation of electrical harnesses. Plainly visible is internal rib structure.

Lifelike Landing View Features F-111 Mockup

What will a carrier deck look like from the cockpit of a Navy version F-111?

Engineering illustrators at GD/Fort Worth are helping to answer the question with scaled schematic drawings of a carrier. The drawings represent the "landing field" a pilot will see from 150, 300 and 450 feet away.

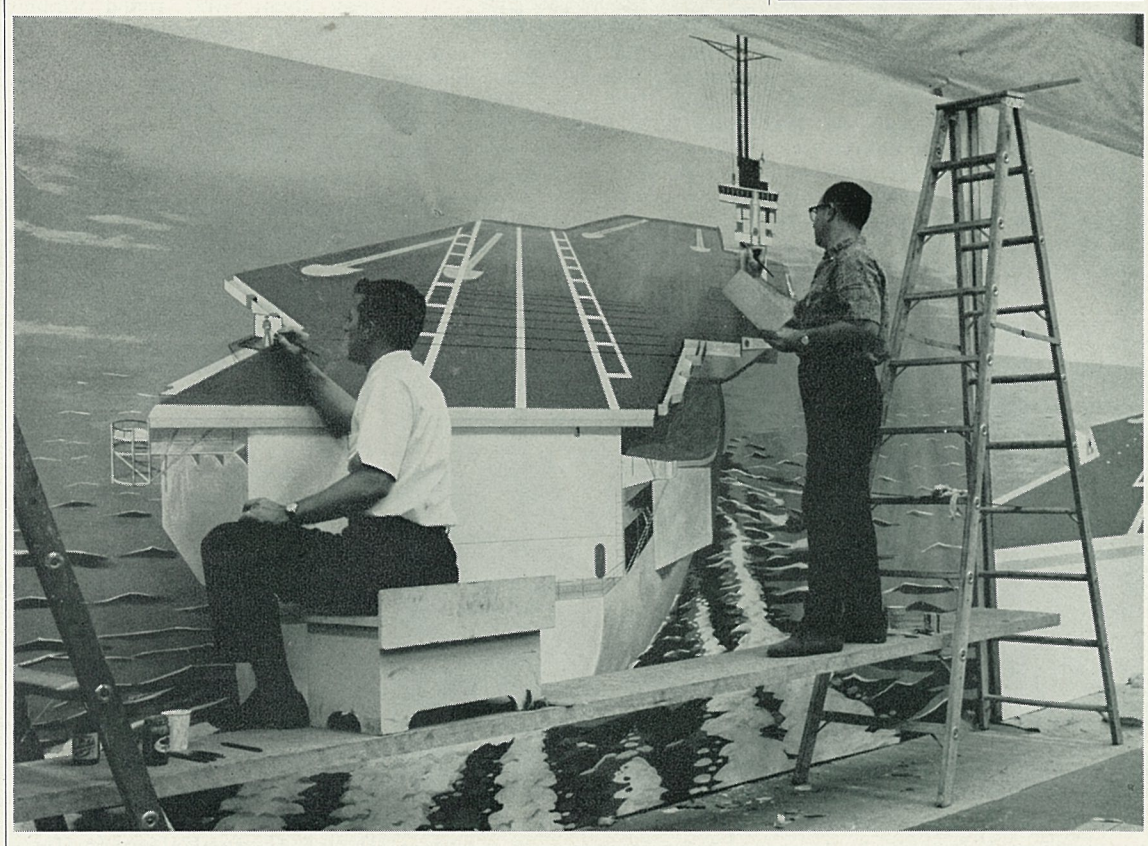
Actually, the viewer will see these displays from the cockpit mockup. It's all part of a cockpit development engineering inspection slated for the near future at GD/Fort Worth.

Similar inspections will be made on Air Force F-111 cockpit mockups, using pictures of landing fields.

"Three different displays were made to reveal what the pilot can expect to see from various distances and attitudes," said A. J. Duban, assistant project engineer F-111 mockup.

A formal mockup inspection will follow later this year, Duban said.

Engineering illustrators who painted the large drawings are W. E. McDaniel, R. M. Benson Jr., J. J. Pickle and J. W. Gilbert, all of Dept. 268-4.



ON THE DECK—Artist's conception of aircraft carrier flight deck will present pilot's view (from mockup) during landing. GD/Fort Worth engineering illustrators, from left, are: W. E. McDaniel, R. M. Benson Jr.

Industry 'First' Scored By Glass Leading Edge With Integral Heating

Horizontal stabilizers for the Air Force C-141 jet cargo transport will be equipped with de-icing leading edges made completely of fiber glass, with integral heating elements, developed at General Dynamics/Convair as a first for the industry.

The new-type leading edges, entirely of fiber glass—including internal rib supports—together with the novel heating elements of thin metal strips, save approximately 100 vital pounds of weight in each empennage.

The fiber glass structure has proved strong and flexible with all the rigidity and stiffness of metal or metal and fiber glass combinations, such as are used on the 880/990 jet transports. Under fire from 1-in. hailstones shot at 460 knots, the fiber glass leading edges didn't show that they had ever been struck!

GD/Convair engineers hit upon the idea of using expanded metal for heating elements as they sought for a lightweight and fail-safe anti-icing system for the advanced type of high-performance craft.

They found that thin strips of metal of inconel and nickel buried within the fiber glass would give controlled resistance and an elasticity far beyond the flexibility of the leading edge—expanding and contracting like rubber bands.

According to Jess Spencer, GD/Convair engineer assigned to design duties under R. W. Miller, C-141 project engineer, the expanded metal never had been used before for such an application. The material is commonly seen as protective covering for such delicate items as resistors or as ornamental grillwork.

Spencer and Gene Catton, manufacturing development engineer, experimented with several types of metal, wire, etched foil before they found the combination which best served the purpose.

The perforated and expanded metal has proved far superior to conventional elements, such as series of small wires or printed circuits. It is not only much lighter, where weight is a critical consideration, but it allows high heat uniformity. Breaks in the tiny strands conducting the current cause little, if any, change in the resistance and they can be easily repaired with new pieces bonded in with conductive epoxy at any place where a short might occur.

The metal comes to GD/Convair from the vendor in flat sheets conforming to GD/Convair specifications. It starts out as solid metal pieces, 5 inches long, and ends up in 40-inch strips after being pierced and expanded when rolled flat under pressure.

In GD/Convair's production area in Bldg. 3, nickel tabs are welded to each end of the strips for uniform distribution of the current. Then the strips are molded right into the fiber glass as the 75-in.-long leading edge sections are laid up. Three strips are wrapped around the edge to give 11 inches of heated surface. Two heating pads go into each of the 8 sections making up the entire leading edge for a C-141 horizontal stabilizer. Power is cycled through the sections alternately from outboard to inboard with the 16 individual areas heated alternately.

Production methods of the fiber glass leading edges and the laminating process for molding the heating elements under the surfaces were worked out in GD/Convair plastics (Dept. 128) under supervision of H. G. Rote, foreman of plastics, trim, and metalbond, and L. F. Boring, plastics assistant foreman.

Do today what a year from now you will wish you had done. Sign up for U.S. Savings Bonds purchase through payroll deduction.

GD/FW Son Selected For AF Institute

William E. Mercer III, son of W. E. Mercer, Dept. 8, has been selected for a graduate engineering space physics course at Air Force Institute of Technology in Ohio.

He was selected for the Institute, an accredited college, on the basis of academic standing in his field and in air science courses, and will receive a master's degree upon finishing.

Mercer graduated in June from Texas U., where he majored in engineering physics.

NICHOLAS PAPER READ AT PACKAGING MEET

Harold B. Nicholas, senior design engineer at General Dynamics/Astronautics, presented a paper, "Component Mounting for Environmental Protection," during the National Electronic Packaging and Production Conference held June 4-6 in New York.

Two Spanish Courses Begin For General Dynamics 'Students'

Two new Spanish courses will start next week for General Dynamics people under CRA-ARA sponsorship.

Beginning class will meet Monday evenings from 7-9 in the executive dining room of Convair cafeteria on Pacific Hwy. with first class June 17. An intermediate Spanish course will be taught Tuesdays, 7-9, in the main dining room. Opening session is June 18.

Jim Hardison of GD/Convair Dept. 15, instructor of CRA-ARA Spanish courses for several years, said the "quickie" 8-week courses will be especially valuable for GD people planning to join the tour to Mexico this summer.

However, they are open to all GD/Convair, GD/Astro, and GD/Electronics students who wish to learn basic fundamentals of the language or brush up.

Registration will be taken at first sessions. Hardison may be contacted at his home phone, 276-5805, for further information.

San Diego Children Seek Foster Homes

General Dynamics Corporation families in the San Diego area who have room in their homes and hearts for young children have been invited to contact San Diego County's Department of Public Welfare for information.

Miss Gladys Madoff, a child welfare worker in the foster home licensing section, said this week there is an urgent need for homes in which children may be placed. They may be for day care only, or on a semi-permanent basis.

Miss Madoff indicated a very special need exists for Negro families to accept children at this time.

She may be contacted at 234-8871, ext. 245, for details.

Mgt. Bowlers End Season

Bowling activities of GD/Astro Management Club were concluded last month with a mixed doubles handicap tournament held at Mission Valley Bowlero.

Tony Genco and Jackie Burris received first-place trophies, while Audrey and T. L. Harris were in second, Peggy and M. G. Witkovic, third, Vince and Corine Cernuto, fourth, and Hank Edie and Jackie Chin, fifth.

Women's individual awards went to Barbara Schultz for high game (197), and Frances Brooks, high series (486), while men's individual winners were J. D. Wiley, high game (214) and Bill Hill, high series (562).

Trophies in Management Club league bowling were also presented to members of Orbiteers (Herb Rasp, Jim Rose, Frank VanDusen, Hank Eide, Bill Moon, and Mike Edwards, captain) who edged Dark Horses by one game on the final night of play.

Individual league trophies went to Forest Erwin for a 241 high scratch game; Gerry Ranney, 634 high scratch sreies; Dave Krause, 271 high handicap game; and Herb Thompson, 703, high handicap series.

Presentations were made by retiring President Ed Russell, and Ad Mosco, club sports director.

GD/Astro Hosts Parts Group

General Dynamics/Astronautics was host for the Space Parts Group committee meeting in May.

The group was recently designated an Industry Advisory Committee by Eugene M. Zuckert, Secretary of the Air Force. Major James R. Golden, Space Systems Division, is chairman.

Dr. Victor A. J. Van Lint, head of General Atomic's radiation effects group, was key speaker. Phil I. Harr, Astro director of reliability control, spoke as did John Philps, Astro parts analysis and application group of engineering. E. S. Winlund, manager of reliability control engineering at Astro, delivered the welcome address.

W. G. Bjornson represents Astro on the group which includes key representatives from industry, military and government agencies.

ARA Riders Slate June 15 Festivities

ARA Riding Club will hold a hayride, barbecue and dance to acquaint all interested GD/Astro employees with its activities, 6:30 to 11 p.m., June 15 in the ARA area.

Cost is $1.25 per person, with additional refreshments available. Reservations may be made with Mrs. Joe Pena, 277-6429, through June 14.

Riding Club has also arranged for riding instruction at discount rates for employees. First class will convene at Bonita Valley Farms, 10:30 a.m., June 23.

Cost of the eight-lesson series is $15, with applications available at employee services office, Bldg. 8.

SUMMER SESSION STUDENTS ENROLL

General Dynamics people may enroll now for most summer school sessions offered at San Diego area colleges and universities.

Registration for San Diego junior colleges will be during the week of June 24 at the admissions center, 835 12th St. The 8-week session begins July 1 and ends Aug. 23.

Information on courses offered by California Western University is available through the Director of the Summer Session at the university's campus, 3902 Lomaland Drive. GD men and women interested in University of California Extension courses may phone 232-7321 or call at the extension office, 1221 Fourth Ave.

Details on summer sessions, day and evening programs, at San Diego State College may be obtained through the Summer Sessions Office, phone 582-4411, ext. 471.

Four Complete On-Job Training In Ind. Mgmt.

Four General Dynamics/Astronautics men have been honored by President J. R. Dempsey on completion of a two-year on-the-job training program in industrial management.

They are Russell N. Babcock, Gene G. Carpenter, Frank R. Lucas and Peter M. P. Norris.

Through the two-year program they worked in material department functions learning procurement, cost and administration, subcontract management, material contracts and operations and vendor research-value analysis.

First "graduates" of a program established by Frank J. Traversi, now vice president-administration, the group are forerunners of a broadened program which now lists 14 trainees working in various administration departments (material, contracts, communication, industrial relations, management systems, management audit, and value control).

Apprentices Plan 'Alumni' Reunion

Graduate apprentices at all General Dynamics Corporation facilities in California are being invited to a special "alumni" get-together June 30 at GD/Convair's Pecan Park.

Families will bring their own food. Soft drinks and beer may be purchased at the park and barbecue units will be available for cooking. Games, contests and prizes are all on the agenda with the program opening at 11 a.m.

Pecan Park is located seven miles east of El Cajon on Highway 80.

Further information is available through J. G. Sewell, ext. 2567, Plant 71, or L. W. Turner, ext. 491, Plant 1.

Astro Women Join In Delta Activity

Several GD/Astro women participate in activities of Delta Toastmistress Club, meeting regularly at 7:30 p.m., second and fourth Tuesdays of each month in GD/Convair executive dining room.

President of the group is Pam Gray, whose husband, W. A. Gray is in Dept. 781, and Marge West, Dept. 156, is vice president and program chairman.

At a recent "pink and silver" membership tea at Kings Inn, Sunny Dark of GD/Astro AFPRO, conducted induction ceremonies for new members.

Camera Enthusiasts To See Special Film

Astro and Convair camera clubs will hold a regular Sunday meeting, 7:30 p.m., June 16 in Photo Arts Bldg., Balboa Park.

A special movie of a trip through Baja California to La Paz, provided for the group by Lute Mason of a local savings institution, will be shown. Members will also view photos made at last month's Photorama.



CLUB INSTALLATION — Management Club officers installed May 22 for 1963-64 term are (seated), from left, Joe Freeman, second vice president; L. F. Tubbs Jr., treasurer; Ralph Montgomery, president; J. W. Woodhouse, recording secretary; M. L. Sweeney, financial secretary. Standing (from left) are board of control members: George Couchman, Carl Uhl, Tony Berardini, B. A. Clemmens, R. T. McMurry, Ken Wulfemeyer, R. J. Haney, E. H. Wesp, D. L. Macey, first vice president, and Al Oberg, board of control, not shown.

Fifteen GD Apprentices Honored At Annual Completion Ceremony

Fifteen General Dynamics apprentices were among more than 200 San Diego men honored at the 22nd annual Apprenticeship Completion Ceremony May 23, marking culmination of apprenticeship training.

The dinner and ceremony in El Cortez Hotel were held under the joint sponsorship of the San Diego General Apprenticeship Committee and the 27 individual trade committees, assisted by the California Division of Apprenticeship Standards, the San Diego City Schools, and the Federal Bureau of Apprenticeship and Training.

The student body of the San Diego Evening College, where apprentices completed their technical training, hosted the affair.

H. W. Rubottom of GD/Convair educational services, and commissioner of the California Apprenticeship Council, presented certificates of meritorious service to members of the Joint Apprenticeship Committee who had served over five years.

Besides receiving one himself for 15 years' service, Rubottom handed certificates to Jack Croft and Marty Stutz of GD/Astro for five years; A. B. Oberg of GD/Convair, 10 years.

Graduating apprentices from GD/Convair were: Lloyd T. McKinney, aircraft electricity; Stanford G. Anderson and Richard C. Singer, electronics; Francis L. Dohm, Robert G. Smith, John T. Willingham, tool and die making and jig building.

Those from GD/Astronautics were: Donald J. Lightfoot and T. S. Sisk, machinist; Richard A. Golem, Dennis R. Hoefs, Jeffrey D. Hughes, William E. Johnson, Walden R. Kellogg, Lawrence R. Lutzke, Richard G. Scharfenberg, tool and die making and jig building.

Joint GD/Convair, SDJC Effort Produces Tech Writing Program

A new certificate program in technical writing is available to General Dynamics people through cooperation of GD/Convair educational services and San Diego Junior Colleges.

Serving on the advisory committee which established the requirements were five GD/Convair and GD/Astronautics training specialists—L. J. Solheid, GD/Convair technical publications supervisor; Louie Henderson of GD/Convair technical publications; L. W. Turner of GD/Convair educational services; C. J. Fisher, GD/Astro support publications supervisor; H. T. Sicard of GD/Astro educational services.

The program offers a comprehensive background in technical data to prepare students for professional employment in the area of technical communications and publications. It is organized on a progressive basis to lead the student from the general field of written communication to more specific areas of logical technical descriptions.

Required courses for a certificate are English for Technical Writers, Introduction to Technical Writing, Intermediate Technical Writing, Technical Writing Workshop, Advanced Technical Writing. Elective courses, of which two are necessary, are Technical Proposal Writing, Technical Report Writing, Technical Specifications Writing, Fundamentals of Graphics.

Courses may be taken either in-plant or at any of the SD Junior Colleges. GD/Convair educational services already has included many of the courses in its supplementary in-plant curriculum, and this fall will schedule Technical Specifications Writing as an advanced course.

Information is available through the SD Junior Colleges' main office, 1425 Russ Blvd., or from Turner, ext. 491, GD/Convair.

ASTRO, GASCO TIE IN VOLLEYBALL ROUND

Second round of IRC volleyball tourney wound up in a tie between Gasco and Dynamics, Astro team, in the American League with both holding 3-1 records.

If Gasco took the play-off last Wednesday, they would go into another match with Dynamics, first-half winner, for championship title.

Fire Dept. was undisputed winner of the National League at close of second round. It was to play Ryan, first round winner, June 5 for the league champ title.

In final games May 29 played by American League teams, Dynamics had a bye. Gasco downed the Untouchables from Astro, 15-10, 15-12; CSEA beat City Engineers, 15-18, 15-9.

National League scores were Fire Dept. over the Wreckers, 15-11, 13-15, 15-8. GD/E won on a forfeit by Hi-Lows. Miramar beat Ryan, 15-9, 15-12.

Saturday Salvage Schedules Listed

Schedule for the next four Saturdays at GD/Convair and GD/Astro salvage yards is:

GD/Astro—June 15, 29.

GD/Convair—June 22, July 6.

Young Race Drivers Compete June 14-16

Three General Dynamics' sons will compete in quarter midget racing in the Regional Championships at El Cajon Speedway this week (June 14-16).

Entered in the stock division event are Randy Headlong, son of Clifford Headlong of GD/Convair Dept. 6; George Hafford Jr. (father in GD/Astro engineering); and David Molter, whose mother is also at GD/Astro.

Mrs. Menzie Wins Top Fishing Award

May awards for CRA Fishing Club's monthly contest went to Ruth Menzie and Joe Sapko.

Mrs. Menzie, wife of Commissioner Bob Menzie, an expert angler in her own right, took top cash prize of $10 for a 3-lb., 4-oz. large mouth bass caught at San Vincente.

Second prize of $5 went to Sapko (retired from Dept. 25) for a yellowtail weighing 17 lbs.

Anglers at GD/Convair and GD/E are reminded that fishing catches must be entered at CRA office before the fifth of each month to be eligible for awards. Entry forms are available at employee services and should be picked up ahead of time and filled in at time fish are caught.

Modelers Schedule Hand-Launch Meet

CRA Aeromodelers will compete in a hand-launched glider contest this Saturday (June 15) at the Clairemont Mesa Flying Site.

Flying hours are between 8 and 11 a.m., said Larry Peterson, Aeromodelers president.

Fathers and sons will be entered in senior and junior classes and prizes awarded in each division.

"This kind of a contest is easy to prepare for and lots of fun for all contestants," said Peterson, who urges all interested modelers to turn out.

All GD/Convair, GD/Astro, and GD/Electronics people and their children are eligible to compete.

A meeting will be held following the contest to plan future Aeromodelers activities.

For details call Peterson at ext. 1477, Plant 1.

Sports & Recreation

Radio Club to Compete In National Field Day

CRA "hams" are getting ready to join other amateur radio operators throughout the country in the annual American Radio Relay League Field Day set this year for June 22 and 23.

Commissioner Jim Lack said that CRA members will be operating their equipment for the second year at Pine Crest, CRA recreation area near Julian. Visitors are cordially invited to drive to the mountain site and watch operations at any time during the 24-hour period.

The event is held yearly to demonstrate that amateurs can set up and operate their stations without using electrical power from commercial lines. Goal is to make as many radio contacts as possible during the set time allowed, using emergency power supplies.

DELTA DIVERS STRESS SWIMMING SAFETY

Diving safety is getting full attention of CRA Delta Divers as the skin diving group begins a series of lessons at local swimming pools in lieu of regular monthly meetings this summer.

Harry Ruscigno, CRA commissioner, said that most drownings are caused by carelessness or ignorance. Although all members are required to pass swimming tests before they can take an active part in the underwater sport, they should be well versed in fundamentals of diving.

Members will be notified by mail of location and time of each instruction session. Others interested may contact the CRA office, ext. 1245, Plant 1.

Several Delta Divers tried their luck diving for yellowtail and halibut off the Coronado Islands on their last outing June 2. Good catches of yellowtail were reported but the halibut proved scarce.

Cash Still Unclaimed By Bowling Winners

Gold is waiting in them thar tills—in CRA office—for some lucky GD/Convair and GD/E "strikers."

CRA is custodian of all cash prizes not yet claimed by winners in the April plant championship bowling tournament and is anxious to hand them over to their rightful owners.

Bowling Commissioner Jim Hayman urges all keglers who took part in the tourney to check winners' lists posted at local bowling alleys and at CRA office to see if they have money coming to them.

Al Phipps Will Host CRA Archery Fans

CRA bowmen will gather for their regular monthly meeting June 20 at the home of Commissioner Al Phipps, 2318 Upas St. Meeting time is 8 p.m.

Anyone interested in attending is asked to call Phipps at his home phone 295-8194. Refreshments will be served.

Several Convair Archery Club members are planning to compete in California State Championship this coming weekend, Phipps said.

Mgt. Club Will Hear Investment Expert

Management Club members from GD/Convair and GD/Electronics will meet tonight (June 12) to hear H. B. Esky, investment expert, speak on stocks and bonds.

The meeting will be at the Copper Penny Restaurant in College Grove Shopping Center under sponsorship of industrial engineering. Social hour begins at 5:30 p.m.; dinner at 6:30.

Tickets, at $2.75 each, are on sale at usual outlets. Raffle prizes will be shares of stock in such concerns as the San Diego Chargers, Lucky Lager, Rose Marie Reed, Wham-O Toy Co.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Hand-launched glider contest June 15, 8-11 a.m., Clairemont Mesa Flying Site.

ARCHERY — Meeting June 20, 8 p.m., home of Al Phipps, 2318 Upas St.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome.

CAMERA CLUB — Joint CRA-ARA meeting June 16, 7:30 p.m., Photo Arts Bldg., Balboa Park. Movie and showing of Photorama photos.

COIN CLUB — Meeting Thursday (June 20), 7:30 p.m., Convair executive dining room.

FISHING—Potluck dinner, 6:30 p.m.; meeting, 7:30 p.m., June 18 at Gillespie Field Clubhouse.

GLIDER CLUB — Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1.

GOLF — Entries open tomorrow (June 13) to June 21 for next month's CRA golf tournament, July 6-7, Coronado. Call ext. 1705, Plant 1.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

PISTOL CLUB — Regular club shoot June 23, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (June 13), 8 p.m., Harbor Drive club headquarters. Annual ARRL Field Day June 22-23, Pine Crest.

ROAD RUNNERS — Weekend outing to Pine Crest recreation area June 14-16. Meeting June 20, 7:30 p.m., Gillespie Field Clubhouse.

ROCKHOUNDS — Rockhound Shack at Gillespie Field closed after tonight (June 12) until September.

ROLLER SKATING — Free skate night Monday (June 17) at Skateland, Front and G Sts. Free tickets at employee services.

SOFTBALL — Plant league games Tuesday and Thursday nights, 6:45 and 8:20 p.m., John Adams Playground, 35th & Adams Sts.

SPANISH — CRA-ARA classes start next week. Beginners, Jan. 17, 7-9, executive dining room; intermediates, Jan. 18, 7-9 main dining room, Convair cafeteria, Pacific Hwy.

SWIMMING — Free family swim night Saturday (June 15), 7-9 p.m., Mission Bay Plunge. Tickets at employee services.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 2456, both Plant 1.

Entries Open Tomorrow For Next CRA Tourney

Starting times for the July CRA golf tourney will be assigned between June 13 and 21 to GD/Convair and GD/Electronics linksmen.

Next month's tournament will be held the weekend of July 6-7 at Coronado course, said Ken Wulfemeyer, commissioner.

Call ext. 1705, Plant 1, for entries.

Padres Ticket Drawing Nears

Baseball fans at GD/Convair and GD/Electronics have until next Wednesday noon to turn in their entries for a chance at free Padres tickets, given by CRA.

The June 19 drawing will be for seven Padres home games scheduled the last week in June and first week in July. Padres will play Salt Lake City June 28, 29, 30, July 1, 2, 3, 4 at Westgate Park.

Entries may be turned in to employee services, Bldg. 32, Plant 1, or sent by in-plant mail to Baseball Tickets, Zone 3-20.

Each entry slip must carry the full name of the employee, clock number, shift, department number, location, plant phone extension. No one is allowed more than one entry.

ROCKHOUNDS CLOSE SHACK FOR SUMMER

CRA Rockhounds will have their last chance to use the club's lapidary equipment tonight (June 12) until the Shack is reopened in the fall.

The Rockhound Shack, now located in the quonset hut at Gillespie Field, will be closed for the summer months for renovation, said Commissioner Dan Whorton.

All heavy equipment, such as grinders, sanders, polishing buffs, will be permanently installed. Saws will be set up. A water line will be put in to run water onto the grinder wheels while in use. Inside and outside of the building probably will be painted and linoleum laid.

All field trips and meetings are cancelled, as usual, during the hot months of July and August. Next regular meeting will be the second Thursday in September and the Shack will reopen Sept. 4.

Reduced-Price Fair Tickets Available

GD/Convair and GD/Electronics people may still buy discount tickets to the San Diego County Fair at Del Mar this week.

GD/Convair employee services, Bldg. 32, Plant 1, will have reduced-price tickets on hand this week only. Tickets are sold at 25¢ discount—75¢ for adults and 25¢ for children.

Early Aircraft Pins Sought For Display

A few items are still needed to complete the display of Convair pins and medals which CRA Coin Club is putting together for exhibit at the Del Mar Fair (June 28-July 7).

Old timers with the company are urged to look through their collections for lapel pins and tie tacks commemorating Convair planes built at San Diego. Other specific items missing are service pins from Vultee Aircraft, before the 1943 merger. Only service pin of this era turned in was a 5-yr. pin, said G. H. Stewart, who is in charge of the display.

Also needed is an F-106 aluminum medal bearing a likeness of the jet interceptor and the legend "More Air Force per dollar."

All borrowed items will be returned.

Anyone who can help locate these particular pins and medals is asked to call Stewart at his home phone, 277-8636, evenings, before June 20.

Model Railroaders Contingent Attends Bakersfield Conference

A contingent of CRA model railroaders from GD/Convair and GD/Electronics were among the 300 fans who set an all-time high attendance record at the Pacific Coast Regional NMRA convention last month.

Karl Busch of GD/Convair Dept. 16 directed all arrangements as general chairman and nearly created a riot at the Bakersfield conference with his performance as dignified emcee in full dress suit and bald "wig." Busch is past president of the San Diego Model Railroad Club with which the CRA group is affiliated.

Bob Durnell of GD/Electronics served as a judge of the model contest and judged lady HOBOS. His wife, Ethel, picked out the worst-dressed "tramp" of men HOBOS, members who have attended at least one national convention.

Dave Kahler of GD/Convair was door prize chairman and his wife, Jane, was co-chairman of the women's Railettes. Kahler was the only one of the local group to place in the model contest, winning a third for his diesel locomotive.

Ken Lawson and George Overlin were other CRA members present.

Next spring's Regional convention will be held in San Diego, Busch said.

Familiar Trio Tops Shooters

Williamson, Mardis, Halfacre —familiar chant in winners' roll call at CRA Pistol Club shooting events — shuffled themselves around to take all three spots in both May 26 events.

Vern Mardis (Dept. 34) topped both the Police Course and the Center-Fire Short National. His scores were 294 in Police Course, and 264 in Short National.

Joe Williamson (Dept. 401) was second in Police Course competition with 290 and third in Short National, 251. Jim Halfacre (Dept. 140) took third in the Police Course, 283; second in Short National, 257.

'Slow Pitch' Teams Vie in Plant Leagues

"Slow pitch" softball teams from GD/Convair and GD/E are in their second week of plant league play after meeting in openers the first week in June.

National League games will pit Hi-Lows against Accounting at 6:45 p.m. tomorrow (June 13). GD/E Material Control will meet Material at 8:20.

The following Thursday (June 20) Material will battle Accounting and GD/E Material Control will play Hi-Lows.

American League schedule is: June 18—Fire Dept. vs. Fabrication, 6:45 p.m.; Tool Store 25 vs. GD/E Purchasing, 8:20 p.m. June 25—Fabrication vs. Tool Store 25, 6:45 p.m.; Fire Dept. vs. GD/E Purchasing, 8:20 p.m.

All games are played at John Adams Playground, 35th & Adams Sts. Spectators are welcome, free of charge.

Peyton Is Elected Society President

G. L. Peyton, chief administrative engineer at GD/Convair, was installed as president of the Society for Advancement of Management's San Diego chapter late last month.

Other new officers include Carl B. Murray, also of GD/Convair, executive vice president.

In-Plant Classes Are Still Open

Registration for three in-plant courses to start the week of July 1 at GD/Convair for the summer session is still open.

Four supplementary classes are scheduled by GD/Convair educational services, in cooperation with San Diego Junior Colleges, for the nine-week term. However, one of two courses in "English for Technical Writers" has already been filled.

Those open for enrollment are: "Basic Technical Writing," taught by F. L. Linderman of Ryan Aeronautical Co. on Tuesdays and Thursdays, 4:30-7:30 p.m., Bldg. 14, Room 8, Plant 1; "English for Technical Writers," Bill Stewart of GD/Astro, instructor, Tuesdays, 4:30-7:30 p.m., Bldg. 14, Room 5; "Basic Electricity," E. B. Milner, also GD/Astro, instructor, Tuesdays and Thursdays, Bldg. 14, Room 7.

Louie Henderson of GD/Convair is instructor of the course in "English for Technical Writers" which has full enrollment.

General Dynamics people may enroll with L. W. Turner of GD/Convair educational services, ext. 491, Plant 1.

APPRENTICE EARNS $200 SCHOLARSHIP

Eugene Perkins, GD/Convair apprentice in Dept. 401, has received one of two scholarships given last month by the San Diego General Apprenticeship Committee.

The $200 scholarships are renewable for four semesters at the rate of $50 per semester. They are made available to outstanding apprentices for continuing their education toward college degrees.

Perkins is in the third year of his tool and die apprenticeship under GD/Convair's program. He attended San Diego State College for a year before beginning apprentice training and is currently enrolled at San Diego Evening College where he has maintained a B-plus average.

Another GD/Convair man, Francis Dohm, now in Dept. 6 following recent completion of the apprenticeship program, is continuing his college work on a similar scholarship received last year.



AWARD—H. W. Rubottom of GD/Convair educational services presents scholarship from SD General Apprenticeship Committee to Eugene Perkins, third-year apprentice at GD/Convair.

Spaceman's Senses Do Double Duty

Manned orbital flights aboard Atlas-boosted Project Mercury spacecraft show astronauts "overwork" their eyes and ears in performing assigned tasks.

Now General Dynamics/Astronautics scientists are working out a system whereby future astronauts on extended space journeys can "see" and "hear" through other senses, such as touch and smell.

For instance, electromagnetic stimulators could be placed on various parts of an astronaut's body where coded information pulses would be felt. They could be tied into critical information devices such as the oxygen supply system. If this required attention, the control system would send an impulse to the stimulator on the astronaut's body. Thus, his eyes and ears would be free for other flight-related tasks.

Nontoxic gas with a distinctive odor could be used to translate a specific signal, such as "watch your humidity gauge." Unless the odor was present, the astronaut could ignore this gauge as functioning properly.

Studies of this type are being made by Astro's life science laboratory. They are being performed in the long-established, company-sponsored Manned Space Station Simulator (MSSS) program. Scientists and engineers serve as test subjects, often remaining "sealed" for days in the MSSS on simulated space flights.

Dr. John M. Coyne, an aerospace psychologist, recently presented a paper on the use of the senses of touch and smell as "information channels."

He pointed out space stations and space vehicles are to become more complex and astronauts required to perform so many tasks that it will become necessary to:

1. Add an additional astronaut and life support equipment with resultant loss of payload, or

2. Expand the capability of the astronaut to receive and utilize information by some means other than his overloaded auditory and visual senses.

Dr. Coyne indicated Astronautics' tests show the use of touch and smell for this purpose is promising.

"Skin-sensation stimulators would permit the astronaut to sleep until his attention was needed, then 'tap him on the shoulder' to awaken him," Dr. Coyne said.

Purchasing Agents Hear 'Smoky' Doyle

C. W. "Smoky" Doyle, procurement value control administrator F-111 material program at GD/FW, was to appear on the program of the International-National Association of Purchasing Agents at Atlantic City June 2-5.



BIG ONE — Three-story tall nose fairing for GD/Astronautics' Orbiting Astronomical Observatory is inspected before delivery by A. P. Turner, left, and C. F. Fitzjarrald at GD/FW.

Nose Cone Three Stories Tall Built at GD/FW for Space Job

An all-fiber glass, honeycomb nose fairing for an Orbiting Astronomical Observatory (OAO) was completed at GD/Fort Worth recently for GD/Astronautics.

The giant fairing—believed to be the largest of its type ever assembled—will be used to carry a Grumman satellite payload aloft on an Atlas-Agena-B booster. Ultimately, it will be used on the Atlas-Centaur vehicle.

Spokesmen described the fairing as the "first of several" expected to be made for GD/Astronautics Division.

Three-stories tall (28 ft.), and 10 ft. in diameter, the nose cone is designed to protect the payload during ascent.

It will be jettisoned outside the atmosphere, permitting the payload to make telescopic stellar observations and to report digital data and television signals.

"Since the OAO must be sterilized and remain germ-free throughout launch, the nose fairing is designed to maintain the necessary microbe-free environment," said W. A. Bratton, engineer in charge of the project.

A special seal much like the one used on a refrigerator door is used to help achieve this ultra-clean effect.

"Check of the seal is done by pressurizing the assembled halves for long periods of time to assure all leaks are detected and eliminated," Bratton pointed out.

Fabrication was done by Dept. 35, with assembly work in Dept. 41. Bratton cited outstanding service performed by a number of employees, including E. C. Costantino, W. F. Sutton, A. P. Turner, R. E. Atnip, C. F. Fitzjarrald and W. W. Segars.

GD/Fort Worth has previously manufactured nose fairings for Centaur and Surveyor space vehicles.

Conference to Hear Dynamics Executives

James R. Dempsey, president of GD/Astronautics, and Dr. Frederic de Hoffmann, president of GD/General Atomic, will take part in the conference on "California and the Challenge of Growth: The Impact of Science" this week (June 13-14) at the University of California's San Diego campus.

Dempsey will be a member of the panel discussing effect of science on industry while Dr. de Hoffmann will speak on "Atomic Energy—the Inter-relation between Economics and Natural Resources."

Dr. Secrest Conducts Physics For Layman

Dr. E. L. Secrest, GD/Fort Worth chief scientist, will be co-lecturer of an experimental study-discussion course on physics for the layman which began June 10 and will continue at 7:45 p.m. each Monday through August 19 at Fort Worth Public Library.

Entitled "The Mystery of Matter," the course is the second unit of the Citizen and the New Age of Science Series developed by American Foundation for Continuing Education under a grant from National Science Foundation.

Before joining GD/Fort Worth, Dr. Secrest was an associate professor of physics at North Texas State University. He holds BS and MS degrees from North Texas, and a PhD from Massachusetts Institute of Technology.

NEVITT TO SPEAK ON SPACE AGE

C. E. Nevitt Sr., Dept. 3-3, GD/FW, will speak on "Preparation for the Space Age" June 25 before the Rocketdyne Management Club at Ridgwood Country Club in Waco, Texas.



IN FOCUS — GD/Astronautics' Virginia Mateja models for cluster of avid camera fans on set prepared by ARA-CRA lensmen.
— Photo by Joe Kayda, Astro Lens

Atlas/Centaur/Surveyor to 'Fly' To Moon in New Astro Test Stand

Plans for a $6.8 million Combined Systems Test Stand (CSTS) in which Atlas/Centaur/Surveyor flight vehicles will rehearse moon-probing missions have been announced.

National Aeronautics and Space Administration (NASA) will build the facility on a 3½-acre plot adjacent to General Dynamics/Astronautics' Plant 71, probably near the southeast corner of the present reservation.

Design work for the CSTS is progressing with construction to start in the fall.

About 140 Astronautics employees, primarily from Centaur test operations under Manager J. S. Harrison, will man the facility for NASA. In addition, personnel from Hughes Aircraft and Jet Propulsion Laboratory along with NASA personnel will be on hand. Hughes builds the Surveyor spacecraft for NASA under direction of Jet Propulsion Laboratory.

Astro plans to have Centaur team personnel from Cape Canaveral participate.

Surveyor is an instrument-packed vehicle slated to probe the moon's surface to gain data prior to manned lunar excursions. Atlas is the first stage launch vehicle, Centaur the second stage.

Grant L. Hansen, vice president and program director—Centaur has indicated the CSTS facility will enable Astro to deliver to launch pads a totally-tested, flight-ready space system, insuring the vehicle is ready at flight time and reducing testing at the launch site.

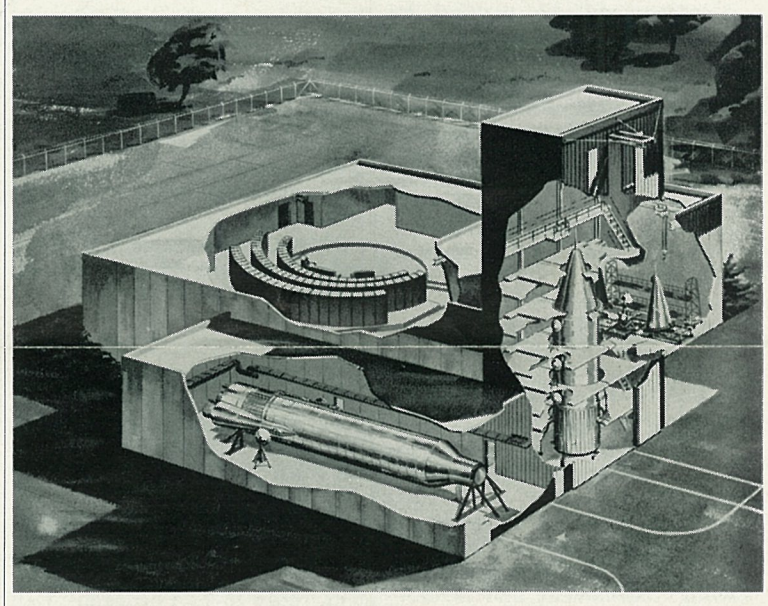
The 22,000-sq.-ft. facility will have the Atlas located in a horizontal position. Centaur and its joined Surveyor spacecraft will stand vertically. All three will be mated electrically and will function as if actually united.

During tests this combination will perform the majority of flight operations, except actual engine ignition, just as they will during an actual prelaunch countdown and flight.

"As far as the vehicles are concerned, they will be operating on an actual flight to the moon," Hansen said. "Guidance will maintain course, autopilot will direct required flight sequences, telemetry will broadcast vehicle performance data, and engines of both Atlas and Centaur will gimbal as if maintaining attitude and course control."

Ground support equipment used in CSTS will closely duplicate equipment in the actual complex, with the control center identical in appearance and equipment to the blockhouse at Complex 36, Cape Canaveral.

At present Astro is preparing an interim combined systems test facility to check out the Atlas/Centaur vehicle without Surveyor. It will serve until the new stand is ready for use.



REHEARSAL — Atlas/Centaur/Surveyor, in artist's conception, rehearses lunar mission in flight simulation facility soon to be built at GD/Astronautics. It will accommodate all stages of moon-bound vehicle for unified ground testing.

Role of Value Engineering in F-111 Emphasized as 22nd Seminar Starts

W. C. Dietz kicked off the 22nd Value Engineering seminar at GD/Fort Worth June 10 by stressing the important role the value control approach will play in building the F-111.

Classes will be held for about 45 employees in Room 113-4C through June 21.

Dietz, chief engineer of the F-111, explained that the value engineering approach can play a vital role in eliminating unnecessary cost on the program.

Attending the seminar are individuals from engineering research and development, F-111 and B-58 engineering, fabrication, and tooling departments, plus others from indirect departments.



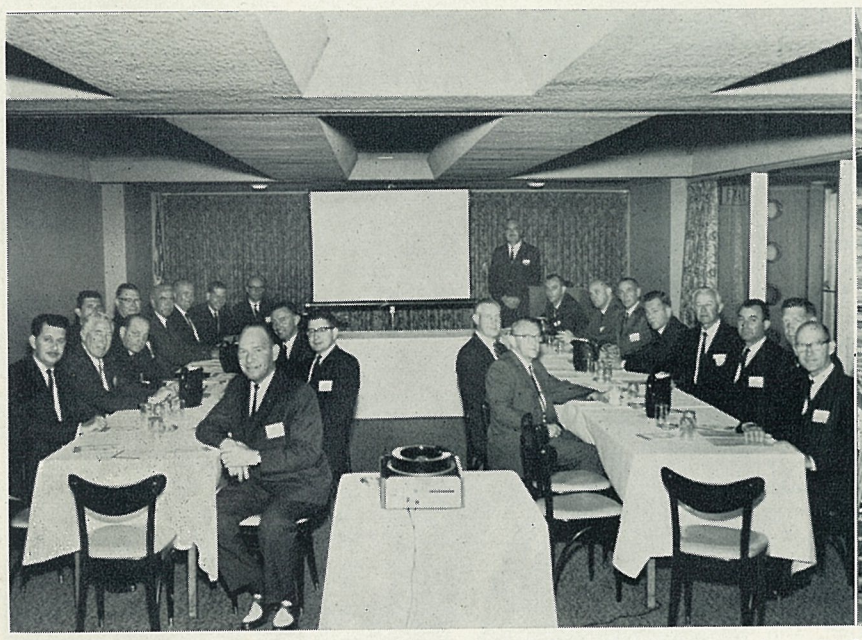
C-141 BRIEFING — Col. Charles W. Atterholt (USAF), chief, San Diego headquarters, SD Contract Management District, is conducted on recent tour of C-141 empennage production area at GD/Convair by J. M. Adamson, C-141 program manager (far right). At left are C. R. Hampton, AF industrial specialist, and D. H. Digges, GD/Convair director of contracts.

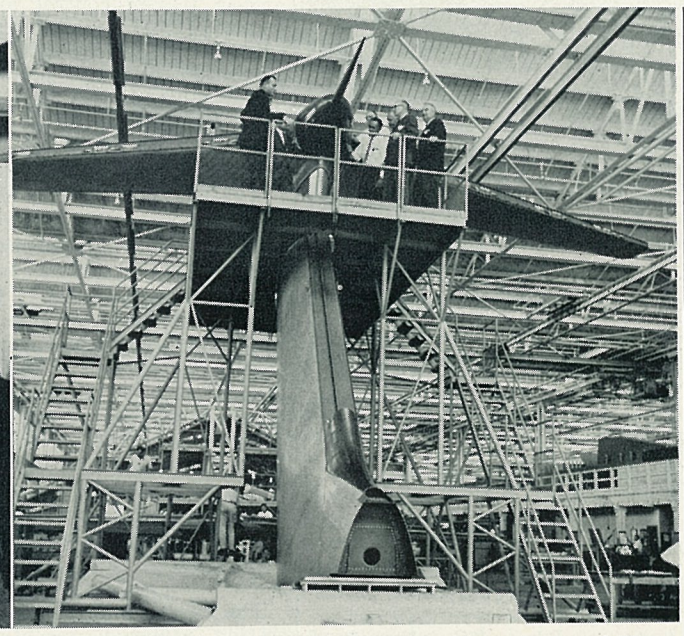
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C-141 ONCE-OVER—B. K. Martin, Lockheed-Georgia manager C-141 subcontracts (standing in photo at left) conducts meeting of GD/Convair and Rohr Aircraft executives at June 18 symposium in San Diego. Later in day, photo at right shows Lockheed representatives inspecting mating of horizontal and vertical stabilizers of fourth C-141 empennage built at GD/Convair, third for shipment to Marietta, Ga., plant. It is due to move out of San Diego this Friday.

Savings Bond Drawings Set For Early July

Bond buyers at GD/Convair and GD/Electronics will have a chance to get an extra bond along with increasing their own savings in the U. S. Savings Bond drive now under way at Dynamics divisions. The current campaign ends this week.

Everyone who increases his payroll deductions or starts the savings program fresh, or even just maintains present bond savings deduction will have his name in the hat for drawings at both GD/Convair and GD/E next week.

Drawing for five $25 bonds will be held July 3 for GD/Convair savers, said J. K. Field, manager of personnel services. GD/Electronics will announce its winners by July 5, said George Oatman of GD/E industrial relations.

Both divisions will draw two winners from names of employees who sign up for the first time. Two bonds will go to winning names of those who have increased their bond savings deduction. One bond of $25 maturity value will go to someone drawn from the group of all employees now participating in the plan.

J. L. Lombardo, general manager of GD/E, said that the division is "pleased to make these awards in recognition of our employees who are turning good in-

(Continued on Page 2)

Jet Propulsion Laboratory Orders Six S-C 3070 Printers

An order for six S-C 3070 electronic printers has been received by General Dynamics/Electronics-San Diego for the California Institute of Technology's Jet Propulsion Laboratory in Pasadena, Calif.

The high-speed computer printers will be installed by the JPL Computer Applications and Data Systems Section in a new center which will go into operation next year. The center, Space Flight Operations Facility, will serve JPL's unmanned planetary, interplanetary and lunar probes for NASA.

In establishing the facility, officials planned to eliminate the necessity for engineers, scientists, and computer management crowding into one computer facility to monitor incoming data during space flights. In the new center, each of the six S-C 3070 printers will be placed in a separate area where different groups can receive the computer-generated information.

Since each input-output area is also a work area, the S-C 3070 was selected because, unlike electro-mechanical printing devices, it operates noiselessly so that other work can be accomplished in the same room. Reliability was another key factor in the selection, as the printers will have to produce data intermittently for as long as three months.

New BUWEPSREP Assumes Duties As Capt. Okerson Goes to ONR

Cdr. Roy A. Evans, USN, assumed duties as new Bureau of Naval Weapons Representative in San Diego effective June 10, with offices on the fifth floor of Bldg. 19.

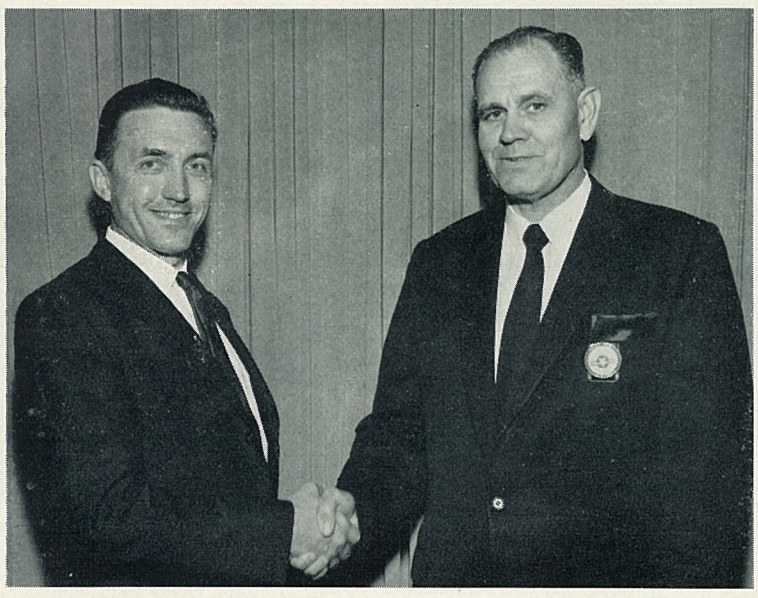
He succeeds Capt. Glenn W. Okerson who had held the post since April of last year. Capt. Okerson is transferring to the Office of Naval Research at Boston, Mass.

Cdr. Evans, who has served with the Navy since 1937, had been based at North Island Naval Air Station the last three years as director of the industrial division of the Fleet Readiness Representative Office, Pacific.

From 1958 to 1960 he was attached to the staff of Commander of Fleet Air Southwest Pacific. Before that he spent three years with the Bureau of Aeronautics Representative Office, Columbus, Ohio.

He saw service with various patrol squadrons in the Pacific area during World War II and was assistant air officer on the USS Philippine Sea from 1953 to 1955. During 1955 he attended the Armed Forces Staff College at Norfolk, Va.

Members of the San Diego BUWEPS office and General Dynamics officials gathered June 12 at a luncheon held at Kings Inn to honor Capt. Okerson and welcome Cdr. Evans.



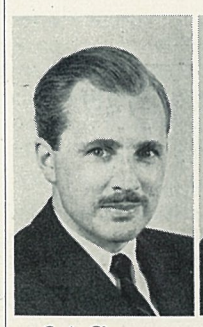
HAIL AND FAREWELL — Cdr. Roy A. Evans (left), new BUWEPSREP at San Diego, is welcomed aboard by Capt. Glenn W. Okerson, who is transferring to Office of Naval Research.

International Posts Filled

Appointment of C. Anthony Chapman as director of marketing—international, and of Allen C. Siebens as director of administration—international, was announced this week by John A. Dundas, General Dynamics Corporation vice president—international.

Prior to joining General Dynamics, Chapman was with Lockheed for 12 years specializing in international marketing, and since 1960 was vice president—sales, Lockheed Aircraft International. Previously he was with Handley Page, Ltd., resigning in 1950 as technical assistant to the chairman and managing director. A graduate aeronautical engineer, Chapman was born in England and was educated at Maiden Erlegh College and London University.

Siebens was assistant to the chairman of General Dynamics from 1957 to 1962 and assistant to the vice president—international during the past months. From 1955 to 1957 he was special assistant to the chairman of American Machine and Foundry Co., and from 1946 to 1955 was a foreign service officer, including three years in the Far East and six years in Europe. A graduate of Oberlin College, Siebens from 1941 to 1942 managed the personnel recruitment office at the AF Materiel Center, Wright Field. He was a Naval officer from 1942 to 1946 and subsequently was special assistant to the U. S. High Commissioner in Germany.



C. A. Chapman



A. C. Siebens

Wives Club to Drop Monthly Luncheons

GD/Electronics Wives' Club has discontinued its monthly luncheons during the summer months.

The regular get-togethers for wives of all GD/E men in the San Diego area, held the second Tuesday of each month, will resume in October.

Subcontractors On C-141 Confer At Symposium

Lockheed-Georgia Co. officials were in San Diego last week to meet with GD/Convair and Rohr Aircraft Co. administrators in a review of activities for subcontractors on the Air Force C-141A.

President J. H. Famme and members of his staff, together with directors of the C-141 program at GD/Convair headed by J. M. Adamson, program manager, were present at the El Cortez Hotel meeting June 18.

"Where We Are and Where We're Going" was the theme of the symposium on C-141A progress and prospects, one of a series Lockheed is conducting at headquarters of all subcontractors.

GD/Convair is building empennages for the Air Force jet cargo transport and Rohr has responsibility for the power package, including pods and pylons.

B. K. Martin, Lockheed manager of the C-141 subcontracts department, directed the meeting, with a talk by S. A. Maddox of C-141 marketing and summary by J. D. Mann, manager purchasing—major systems and components. Also here for the meeting was Robert Gilson, C-141 project engineer for Lockheed.

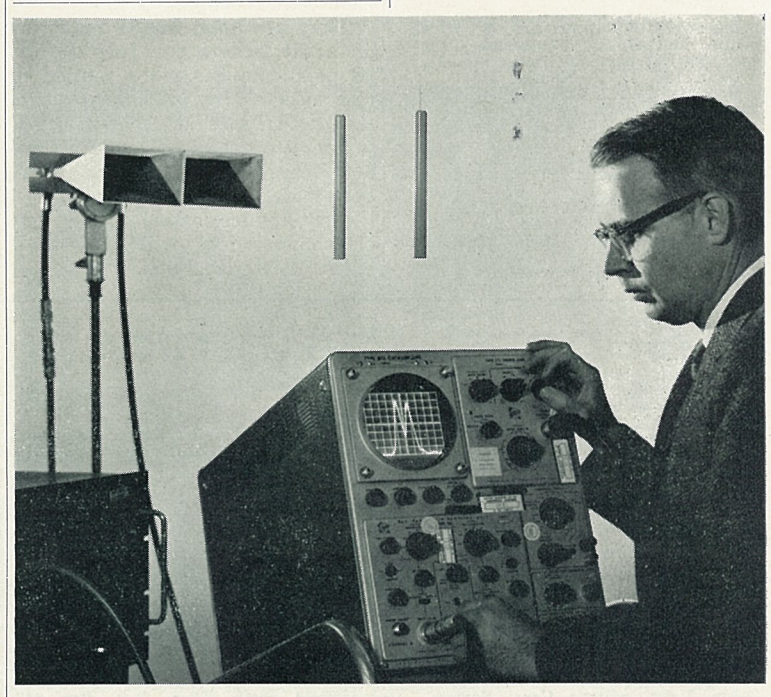
New GD/E Radar Can Pinpoint Planes at Night

General Dynamics/Electronics-San Diego has developed a new type of radar which can identify moving or stationary vehicles in a forest or can identify individual aircraft in crowded night-time air traffic control situations.

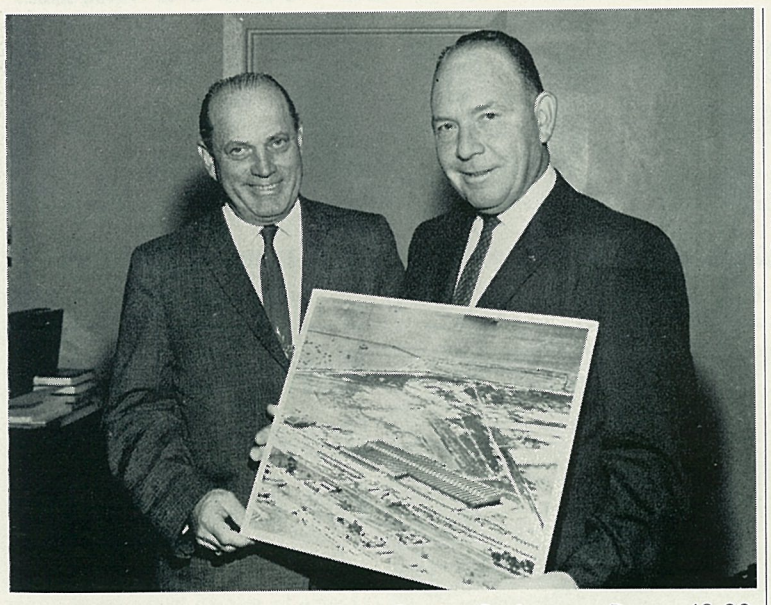
The new technique, called Short Pulse Radar, was demonstrated for the first time early this month at the GD/Electronics exhibit at the Armed Forces Communications and Electronics Association convention in Washington, D. C. General Manager John L. Lombardo headed a contingent of GD/E officials present at the June 4-6 demonstration.

The short pulse technique,

(Continued on Page 2)

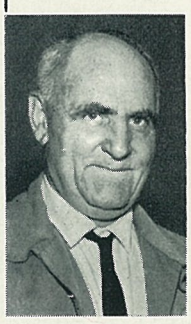


PINPOINTING RADAR — R. R. Apgar, GD/Electronics engineering project manager, demonstrates GD/E's new Short Pulse Radar technique with radar return from two hanging metal cylinders photographed on oscilloscope screen. New radar can identify between objects only few inches apart.

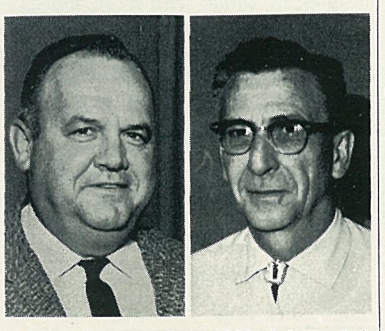


TWENTY-FIVE YEARS AGO — G. A. Covington, Dept. 48-00, right, and J. H. Famme, GD/Convair president, display picture showing how Convair looked when Covington joined the company 25 years ago. Latter had just received appropriate service emblem from Famme.

Log Book Entries



Gerald F. Cooper, Dept. 171, General Dynamics / Convair, received his 25-year service emblem last month.



D. P. Weaver, Dept. 131, left, and J. T. Greacen, Dept. 6-2, celebrated their 25th GD/Convair anniversaries this month.

Service Emblems

CONVAIR

Service emblems due during the period June 16 through June 30.

Twenty-five-year: Dept. 401-2, G. W. Allen.

Twenty-year: Dept. 141, W. C. Stewart; Dept. 171, W. D. Schackel, H. A. Staufenbeil, A. J. Winner.

Fifteen-year: Dept. 15-0, H. L. Wylie; Dept. 42-6, Craig Lent; Dept. 44-5, C. D. Crone; Dept. 401-7, Helen N. Duffee.

Ten-year: Dept. 6, A. B. Greeson, Remo Tontini; Dept. 400-1, R. V. Cutler; Dept. 401-5, F. R. DeGreef.

GD/ELECTRONICS

Ten-year: Dept. 74-40, R. L. Behrens.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending June 7 and June 14.

Dept. 25, W. R. Compher, M. P. Quijas, D. C. Taylor, $3.34 each (joint award).

Dept. 44, H. G. Barnes, $10.

Dept. 101, V. E. Poquette, A. L. Simpson, $26.20 each (joint award). G. W. Oliver, $20.70.

Dept. 119, M. D. Smith, $25.50.

Dept. 128, V. Breit, $15. E. E. Carpenter and C. H. Fenstermacher, $50 each, partial payment (joint award).

Dept. 131, H. J. Komos, $15.80.

Dept. 171, W. J. Gibson, S. S. Stearns, $39.50 each (joint award). H. C. Killgore, C. H. McCullough, $5 each (joint award). G. A. Hasti, $18.30.

Dept. 400, S. W. Kellogg, $10.

Cost Improvement Proposals for the same periods.

Dept. 26, Mattie C. Ross (2).

Dept. 42, R. L. Ingraham.

Dept. 171, L. R. House and R. J. Ratliff (joint).

Dept. 401, V. P. Mavrinac.

Retirements

CONVAIR

GOLDMAN—Morris L., Dept. 140. Seniority date July 6, 1950, retirement effective April 11, 1963.

HAIGHT—Bessie S., Dept. 142. Seniority date Jan. 24, 1952, retirement effective May 31, 1963.

MERGEN—Philip O., Dept. 401. Seniority date Oct. 18, 1951, retirement effective May 5, 1962.

MINER—Walter E., Dept. 292. Seniority date Sept. 4, 1953, retirement effective June 19, 1962.

Personals

CONVAIR

I deeply appreciate the kind expressions of sympathy from Convair friends at the loss of my wife.

John F. Mellett, Dept. 15.

Mgt. Club to Watch Ball Game July 10

Management Club members and their families will be "out to the ball game" for their July gathering.

Ball Night for GD/Convair and GD/Electronics members, families, and guests has been set for the night of July 10 at discount prices. A block of reserved box seats has been set aside at Westgate Park, just for the Management Club to root on the Padres in their game with the Denver Broncos.

Tickets, at $1.25 each (for $2 seats), are on sale until July 8 on a first-come, first-served basis at all regular outlets.

The yearly "night out" is sponsored by the club's board of control with G. O. Couchman making arrangements.

Discount Offered On Two Ice Shows

Discount coupons to the coming Ice Capades extravaganza are now on hand at Convair employee services for GD/Convair and GD/Electronics people.

They are good for $1 reduction on adult tickets for July 25 and 28 performances when mailed or presented with ticket requirements to Ice Capades box office in lobby of U. S. Grant Hotel or at Westgate Park. Box offices open this Friday, June 28.

Ice Capades, called the "greatest show on ice," will be presented at Westgate Park.

New GD/E Radar Is Introduced

(Continued from Page 1)

which has been under development at GD/E since 1958, is designed for either military or commercial application. Use of the short pulse technique as a high range resolution surface radar would include airport and harbor traffic control and surveillance, and warship and aircraft identification. In battlefield surveillance, the technique would enable military men of the future to distinguish between men and their equipment at great distances.

Another use of the versatile tool is the determination of the locations of imperfections in waveguide and other types of transmission lines.

It can evaluate the radar cross-section of individual scattering points on complex geometric shapes, such as a nose cone or missile.

As a laboratory tool, Short Pulse Radar is useful in the study of signal delays which may take place under varying atmospheric conditions, such as clouds and temperature, said GD/E engineers.

The technique involves the generation, radiation, reception, and display of microwave impulses lasting a fraction of one-billionth of a second.

Use of a radar impulse lasting this flash of time will permit detection and separate display of each of the multiple signals emanating from reflecting points on the object separated by a few inches. A conventional pulsed radar is capable only of detecting the mathematical summation of all the multiple signals.

Since Short Pulse Radar enables the researcher to separate unwanted signals from signals emanating from the object under test, it can locate objects in "clutter," explain GD/E engineers. Thus, a vehicle in a forest would stand out from the trees, or "clutter" in the radar picture.

Tests at GD/Electronics, using a low power transmitter, demonstrated that the radar return from people can be distinguished from other objects at ranges over 1,000 feet. The radar return from a two-foot sphere suspended from a string indicates a return from the string as well as the sphere to allow separate identification.

Through continuing research GD/Electronics engineers anticipate that they will discover many practical uses for the newly-developed technique.

Savings Bond Draw Set For Early July

(Continued from Page 1)

tentions into realities by regular and systematic saving through the purchase of U. S. Savings Bonds."

President J. H. Famme of GD/Convair urges all to join in the plan, "You're helping Uncle Sam, as well as yourself. Our savings in bonds help keep the economy of the country in a healthy state —and that benefits all of us. If you're not already buying bonds by payroll deduction, I hope you'll join thousands of others now in the plan."

GD/E Daughter, Age 7, Dances in 'Carousel'

A small GD/Electronics daughter is being seen in the dance ensemble appearing with "Carousel," now showing at Circle Arts Theatre.

Debbie, 7-year-old daughter of Charles W. Osborn of GD/E Dept. 71, a student of Hallick Vaughn Studio, has been studying tap and ballet since she was three.

DAN OTTO PRINTS PUT ON DISPLAY

A showing of photographs taken by Dan Otto, GD/Convair supervisor of photography, recently was held at the Islandia, Mission Bay hotel. The collection of 24 prints were taken over the last 10 years during trips to Mexico and Guatemala.





CLUB HONORS — In top photo, Lee W. Stamper, left, Dept. 119 assistant foreman, and Herb B. Day, Dept. 16 supervisor, right, accept MacSave-it trophies from R. K. Gottschall, manager of publications and service parts, as top CIP suggesters for April and May. Event was Management Club meeting. In lower photo, Mike Clark of GD/Convair labor relations, left, receives Mug of Month from V. L. Summitt at June meeting.

Two GD/Electronics Men Earn High Praise For 'Extra Effort' During REINS Checkout

Two General Dynamics/Electronics-San Diego men, who took part in an extensive checkout of REINS navigation and bombing system for the Navy A3J-1 attack bombers late last year, have received plaudits from North American Aviation's Autonetics Division.

Max Leeds, GD/E manager REINS engineering, and Norm Niemet, GD/E field service representative, were commended for their "extra efforts" as members of the support team assigned to Navy Heavy Attack Squadron VAH-7 during the three-month exercise aboard the aircraft carrier Enterprise.

J. P. Condon, Autonetics chief field engineering and logistics training—Armament Control Division, pointed out that they "contributed many extra hours of effort without regard for personal inconvenience, which did much to enhance the favorable position maintained by North American, and reflected the quality of training and support provided by the in-plant organization."

An Autonetics marketing newsletter accompanying the commendations pointed out that in follow-on checkouts this spring 10 aircraft made 98 flights over a three-week period with the system availability scoring out at 84 per cent and reliability climbing to 61 per cent. Last month 10 more aircraft and 25 flights were scored with the system availability "rounded out at an even 100 per cent and reliability rising to 84 per cent."

Institute Sponsors Environment Class

Thirteen of the 17 graduates of a recently-concluded specialized course on environmental science were from General Dynamics facilities in the San Diego area.

The 20-hour course, one of the first of its kind, was sponsored by the San Diego Chapter of the Institute of Environmental Sciences for technicians and engineers working in the field.

C. G. Franklin, GD/Electronics assistant group engineer and educational chairman for the professional society's local chapter, said that approximately 10 of the students were from GD/Astronautics, two from GD/E, and one from General Atomic.



GRADUATION DAY — Cal G. Franklin, GD/Electronics assistant group engineer, at far right, presents certificates to Jo Ann Kranz and Peter J. Kicak, both GD/E Dept. 30, on completion of environmental science course. Looking on, at left, are A. S. Freedman, GD/E manager of design assurance, and H. J. Stuart, GD/E manager of reliability and quality control.

General Dynamics NEWS

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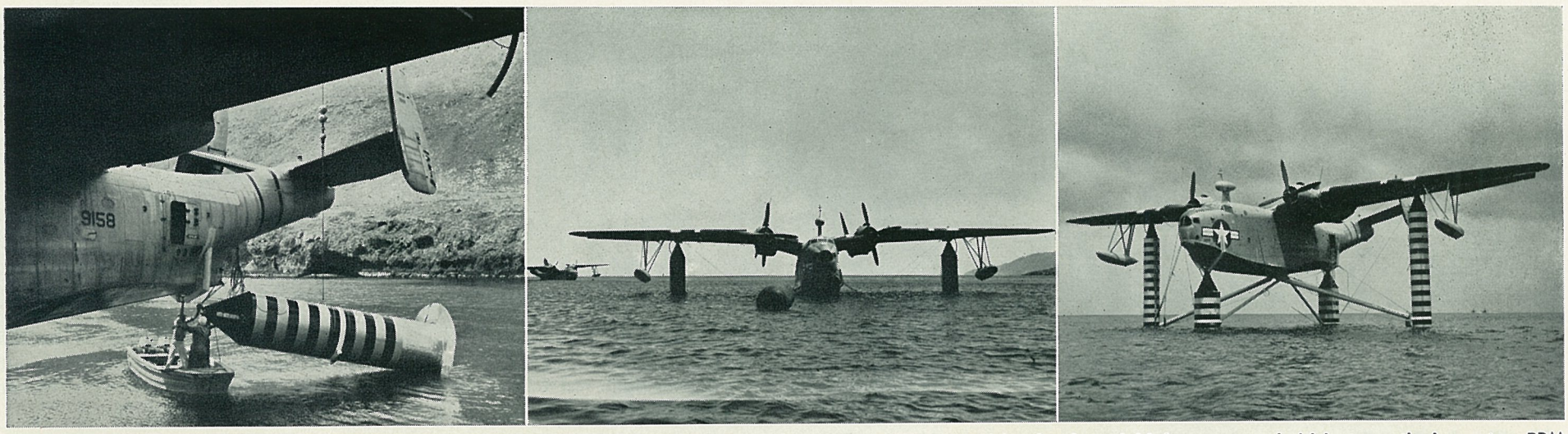
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SOLID "BED"— PBM seaplane (at far right) is hoisted high out of water on stilt-like floats, two supporting fuselage and one under each wing. Floats were designed at GD/Convair under Navy study contract for stabilizing seacraft in rolling waves. At left, mechanics attach large float to aft fuselage at test site in Pacific Ocean, near San Clemente Island, where initial tests were held last month. In center, PBM equipped with floats rests steady, while unmodified seaplane at far left rolls with swells, bringing green cast to faces of several sturdy seamen. Men and instrumentation on stabilized plane were unaffected.

East Coast Computer Service Established by GD/E, Recordak

A new business service bureau for East Coast computer users has been established in Washington, D. C., jointly by General Dynamics/Electronics-San Diego and Recordak Corp., a subsidiary of Eastman Kodak Co.

For the first time, computer centers in government and industry can have the advantage of high speed conversion of computer "records" to more usable form on an hourly or job basis.

The new facility is equipped to translate computer output codes directly into understandable language and drawings on microfilm and paper.

Heart of the service is GD/Electronics' S-C 4020 computer recorder. At speeds consistent with today's large-scale computers, the S-C 4020 transforms magnetic tape recordings into usable language and graphics on both page-size photo-recording paper and on compact microfilm for instant accessibility and automated information retrieval. Complex annotated charts or drawings can be recorded by the S-C 4020 in less than a second.

Multiple film or paper copies are then readily producible for distribution from the primary microfilm records using Recordak equipment.

According to the joint announcement by GD/E and Recordak, the service facilities of the new bureau are as complete as they are simple to use. The computer user merely sends magnetic output tapes to the service bureau. Within a few hours, they are ready for delivery along with the microfilms and/or photo-recorded translations to paper form to meet individual requirements.

Engineers, scientists, and business managers now can have the answers to computer-calculated problems, or fully annotated graphs and drawings produced by their own computers, more quickly and in more practical form than is possible with conventional printout methods.

Special programing and consultation services by GD/Electronics specialists are part of the service bureau "package."



MARKED — Shot of Little Joe II launch vehicle being readied at GD/Convair for move-out to White Sands Missile Range shows pattern of black painted rectangles used to check stability during firing. Telescopic instrumentation systems record missile path on film.

Product Support Reps Confer To Tackle Mutual Problems

Product support representatives from General Dynamics divisions took part in a Joint Aerospace Industries Association and government conference on weapon systems support problems the week of June 3 in Washington, D. C.

Industry, represented by some 180 managers of product support, spares logistics, and technical publications functions, met with their counterparts within the Air Force, Navy, Army, and the Office of the Secretary of Defense. Discussions dealt with mutual problems involved in the operational and maintenance support of complex and costly weapon systems currently in the inventory and required for future defense of the nation.

General Dynamics personnel at the conference included K. R. Aiken, service parts manager; A. H. Gross, manager technical publications; R. C. Harbert, manager customer service, all from GD/Astronautics. From GD/Convair were R. W. Emerson of service parts; H. R. Kennedy, chief of technical publications; R. K. Hall of customer service.

GD/Fort Worth was represented by G. B. Clayton, chief F-111 technical publications; B. G. Fay, chief F-111 supply; R. W. McGuffee, manager F-111 logistics support; R. E. Reade, manager logistics support—B-58.

Bowen Moves To Washington

J. E. Bowen, manager of Navy requirements at GD/Electronics-San Diego, has transferred to the Washington, D. C., office of General Dynamics as requirements representative—electronics.

In his new post Bowen will be primarily responsible for contacts with the Navy in areas concerning electronics requirements. He reports to R. W. Menzel, who heads the GD electronics group. E. J. LeFevre is general manager of the Corporation's Washington, D. C., office.

Bowen has been with the company since fall of 1956 when he joined GD/Convair engineering. He transferred to GD/E with its formation in 1961. He was responsible for design and development of pre-flight test equipment for REINS radar, and, as application engineer, was responsible for sales, customer negotiation, and proposal evaluation on airborne radar and terrain following radar systems.

His duties as manager of Navy requirements have concentrated on sales and customer contact in all areas of Navy and Marine Corps cognizance.

"A penny saved is a penny earned." Buy U.S. Savings Bonds by payroll deduction.

New Weld Techniques Developed In Skin Studies for Spacecraft

Interplanetary space vehicles journeying to Mars and beyond may require skins at least 1½-inch thick to contain the heavy propellant and payloads they must carry.

This is one of the facts being probed at General Dynamics/Astronautics in conjunction with a NOVA study contract.

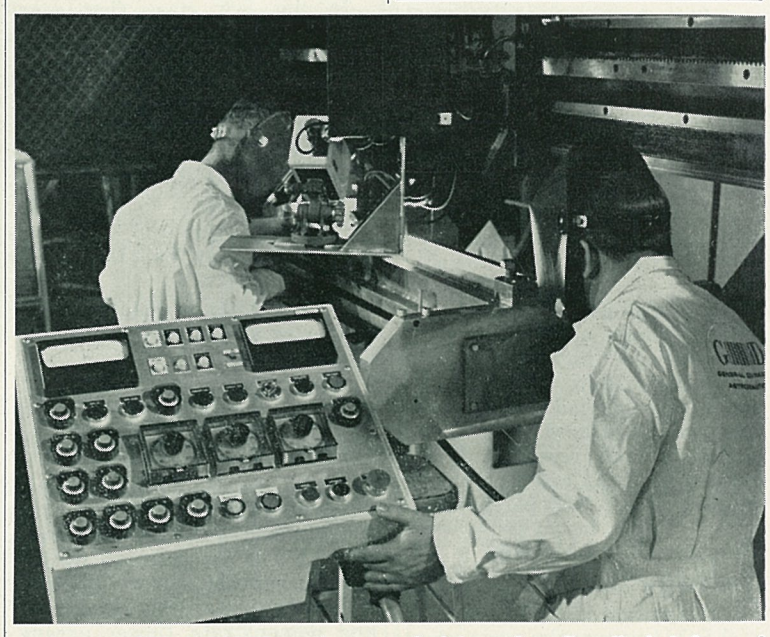
Andrew Kalitinsky, program director, heads the Astro effort being conducted for National Aeronautics and Space Administration's Marshall Space Flight Center.

Studies have led Astro to develop advanced welding techniques through an extensive manufacturing research program for NOVA. And this program is helping resolve manufacturing problems.

J. C. Duffy, manager of NOVA manufacturing engineering, said that Astro-developed welding techniques have centered around 2014 and 2219 aluminum alloys in flat, vertical and horizontal positions. Research in this area is nearing completion with plans for working with new 7000 series aluminum alloys.

Aluminum, while not as strong as the stainless steel found in Atlas and Centaur vehicles, is much lighter. Certain alloys are being tested because they show an "attractive weight-to-strength ratio," Duffy said.

From work to date, and that in the future, will come design allowables for structural engineers to use in design of the NOVA vehicle.



ADVANCED WELDER — Astro technicians Ben Esquibel, left, and Rudy Allen operate new fusion welder capable of joining two pieces of 1½-inch aluminum. Astro NOVA studies have indicated interplanetary vehicles of future may require skins this thick to carry propellant and payloads on lengthy space journeys.

Traversi Is Panelist At Value Meeting

F. J. Traversi, General Dynamics/Astronautics vice president—administration, served last week as panelist at a special meeting of Los Angeles Chapter, Society of American Value Engineers.

In a discussion moderated by Dr. H. Lawrence Hall, associate management professor, Los Angeles State College, Traversi presented "An Executive View of Value Engineering."

PBM Rides High, Steady On Wave-Defying Floats

A PBM, resting on vertical floats designed by General Dynamics/Convair, was virtually unmoved by high waves and winds during initial sea tests off the Pacific Coast last month.

"Sea kindliness" qualities of GD/Convair's concept were proved without question, said H. E. Brooke, chief of hydrodynamics, as the seaplane rested perfectly stable on the stilt-like tubes.

Research over the last year under a Bureau of Naval Weapons study contract has allowed GD/Convair engineers to develop devices to hold a seaplane out of water as a rigid platform in the open ocean.

Two PBMs, provided by the Navy, were used in first actual tryouts during the month of May near San Clemente Island. One was equipped with four large floats, one under each wing and two supporting the fuselage. (Test floats were oversize for evaluation purposes.) The other PBM was without floats so that motion of the two seaplanes could be compared.

Seamen from North Island NAS were drafted to ride both planes as they swung in waves up to four and five feet high. Those on the unsupported seaplane were soon hanging over the sides seasick, while people and instrumentation on the vertical float flying boat were unaffected, said Brooke, who expressed himself as "eminently satisfied with the outcome of the tests."

"Every point of our model tests in the towing basin was substantiated," he said, "and I can't praise our GD/Convair team enough for the terrific job they did. Everyone involved—from plant engineering, experimental factory, engineering—pitched in to make this a truly cooperative effort."

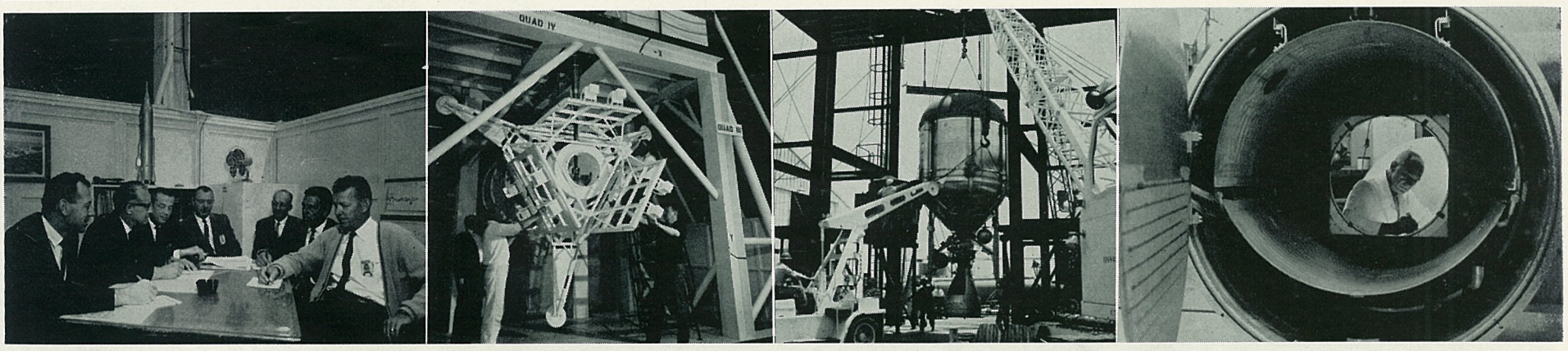
Negotiations now are under way for a follow-on series of tests in rougher seas and higher waves.

Development of devices to stabilize seaplanes was initiated by Eugene H. Handler, Bureau of Naval Weapons aircraft hydrodynamics engineer, who has followed closely all GD/Convair progress during the current task.

"We believe that the vertical float concept represents a 'breakthrough' for ASW aircraft, providing a vehicle with a combination of capabilities of cruise speed, range, payload, and seakeeping unequalled by any ship, hydrofoil boat or aircraft in existence," said Handler.

GD/Convair's tilt float concept is specifically pointed for incorporation into such craft as GETOL (Ground Effect Takeoff and Landing), under study at GD/Convair. The floats are designed to retract under the fuselage during flight and for release when landing on water.

Pivoted channels would be rotated from their in-flight position along the hull keel to vertical positions, locked in place, and inflatable tube-like floats expanded from within the channels to full size. Again, by simply exhausting the air, the floats could be retracted into the channels and swung back to the keel. Wing floats could be rotated and a telescoping extension expanded, or possibly housed in the wings for release.



IN MANY FIELDS — At left, R. T. Bauman, general foreman, second from left, outlines Dept. 756 activity for Foremen R. G. Carman, D. R. Dayharsh, L. H. Green, W. H. Houchin, T. R. King, H. L. Sterling. In next photo, Dept. 756 crew, Alex Lupenko, J. P. Bate, Leo Bartoy, R. Stehlik ready Surveyor spacecraft for test. Second photo from right: test vehicle is installed in vibration stand. Photo at right: Walter Grimm checks cold wall unit in environmental test lab.

Skilled Craftsmen Assigned To Help Scientists, Engineers

Employees of a unique General Dynamics/Astronautics department are scattered throughout two major plants, and from Point Loma on the Pacific's edge to remote Green Farms Test Site in Camp Elliot back-country.

Tasks range from precision milling and boring of exotic metals to preparing equipment for elaborate research projects which span the spectrum of space science from aerophysics to human engineering.

This is engineering test support (Dept. 756), a portion of Factory Manager J. P. Hopman's assembly and fabrication department.

The group, under General Foreman Ralph Bauman, is charged with providing "half" an engineering team—the "doers" and craftsmen on whom GD/Astro's scientists and engineers depend for hardware aspects of their work.

"Home base" for the department is in Bldg. 5 at GD/Astro's main plant where it mans five well-equipped shops and laboratories.

An electro-mechanical lab includes an enclosed, dust-free facility and adjacent open shop area for research, development, manufacture and test of precision mechanical, electro-mechanical, hydraulic and pneumatic components and subsystems.

A near-by machine shop is equipped for precision machining of both the usual and exotic engineering materials for production of test specimens and specialized equipment.

Welding and brazing, soldering, cementing, riveting are accomplished in an experimental assembly shop, also located in Bldg. 5. Projects here range from electronic wiring to construction of working-model space vehicles!

Other Dept. 756 employees are widely scattered among engineering and scientific laboratories throughout the main plant.

Test lab support personnel work side by side with Dept. 560 employees, assisting engineers in setting up and conducting material and chemical tests, vibration and environmental research, and hydraulic and pneumatic studies.

Still others are assigned to development, design and reliability laboratories, assisting with reliability testing and research in space physics, cryogenics, radiation systems, etc.

More assistance to GD/Astro engineers and scientists is provided by Dept. 756 employees working in research and test laboratories at GD/Convair's Plant 1.

Here are centered studies in infrared and optics, fluid systems design, physics. Tests in fields of dynamics, electro-dynamics, electronics and hydraulics are also conducted here.

Testing and research directly related to Atlas and Centaur are aided by Dept. 756 personnel assigned to GD/Astro's Point Loma Test Facility.

For assistance in supervising his department's widely dispersed operations, Bauman relies on Foremen R. G. Carman, D. R. Dayharsh, W. H. Houchin, T. R. King, L. H. Green and H. S. Sterling.

They oversee a staff which has been directly involved in nearly every major GD/Astro program, and which provides an important "boost" for constantly evolving new projects.

Among dozens of current programs in which Dept. 756 participates are the recently-completed Atlas vibration test stand at Plant 71, centrifuge studies carried on by life sciences (Dept. 594), micrometeoroid impact research in Dept. 592, the infrared FLIP program, and GD/Astro's advanced LASER studies.

Astro, Convair Set Salvage Schedule

Salvage yards at GD/Convair and GD/Astronautics main plants will be open for employee sales on the following alternating Saturday morning schedule:

GD/Astro—June 29, July 13.
GD/Convair—July 6, 20.

Modelers Compete In Flight Contest Held Near Elsinore

Modelers from five General Dynamics divisions competed in the Tri-Club semi-annual free flight contest held late last month at Elsinore.

Sponsored by CRA Aeromodelers, Astro Modelers, and San Diego Orbiteers, the meet drew contestants from Convair, Electronics, Astronautics, Pomona, and General Atomic, said Commissioner Don Larsen.

An unscheduled demonstration of the ups and downs of flight was seen when a full-scale piloted glider lost its thermal and landed 50 yards from the model flying area, said Larsen. A Piper Cub landed to tow the glider back up into another thermal.

Categories for the modelers' event were ½A gas, A gas, B/C gas combined, A-1 and A-2 glider combined.

Winners from the San Diego area were: Al Lidberg of SD Orbiteers, first place, A-1, A-2; Les Hill, SD Orbiteers, third place, A-1, A-2; Larry Peterson, CRA club president, fifth, A-1, A-2.

In the ½A class first place went to H. Shimazu, SD Orbiteers; fifth to L. Simpson, SD Orbiteers. E. Simpson of the Orbiteers placed second in A gas; Nat Antonioli of GD/Convair, third. In B/C gas event Wes Woodrey of Astro was third; J. Lesnick, Orbiteers, fifth.

High time for the meet was won by Dr. Ray Van De Walker of Los Angeles.

Directing arrangements for the meet was Rolland Dexter of General Atomic.

Gardeners to Meet For Japanese Film

ARA-CRA Garden Club members will gather at 7:30 p.m., July 3 in Balboa Park's Floral Assn. Bldg. for a presentation by Isamu Kawagochi, who will show a film on "Gardens of Japan," and demonstrate flower arranging.

The group will also make final plans for its summer flower show slated Sunday, Aug. 11, in Balboa Park.

Ice Skaters Get Reduced Rates

Ice skating — ARA-CRA's "coolest" summer sport — will continue throughout the season at reduced prices.

The ARA-CRA group holds a private skating party each Thursday, 6:30 to 8 p.m., at Mission Valley Ice Plaza, after which skaters may continue with the general public until 10:30 p.m. at no additional cost.

Summer rates are 90 cents for adults, 75 cents for juniors (12 through 17), 55 cents for children under 12. Skate rental is 35 cents.

Club membership costs $1 per family per year, with all receipts returned to participants in the form of parties, refreshments, etc. The group also offers free classes for beginning and intermediate skaters under direction of David Pencosky.

Applications are available, and dues will be collected, during any of the Thursday sessions at the Ice Plaza.

No ice skating session will be held next Thursday due to the Fourth of July holiday.

FEW PLACES LEFT ON MEXICO TRIP

General Dynamics people regretting that they missed the deadline for signing to go along on the de luxe tour of Mexico this summer have another chance, if they hurry!

Jim Hardison of GD/Convair Dept. 15, who is conducting the trip by train to Mexico City and Acapulco this summer, said that a few more openings have been made available. All GD employees and their families are eligible to take the two-week tour, Aug. 16-Sept. 1.

However, they must call Hardison immediately to be included. He may be reached evenings on his home phone, 276-5805.

Over 100 people from GD/Astro, GD/Convair and GD/Electronics enrolled in the two short Spanish courses started last week by Hardison, under CRA-ARA sponsorship.

Anyone signing for the Mexican tour will find the instruction in common phrases especially helpful, said Hardison. Classes are still open to GD people and their families. Beginning class is held Mondays, 7-9, in the Convair executive dining room, Pacific Hwy. Intermediate class meets Tuesdays, 7-9, in the cafeteria's main dining room.

GD/Astro Daughter Is Title Candidate

GD/Astronautics daughter Judith Ann Cheek, 16, was Lemon Grove's entry in the recent Miss Southern California

Her father, James H. Cheek, is assigned to GD/Astro's Sycamore Canyon Test Site (Dept. 573-4), and her grandfather, Albert E. Ward, is in GD/Convair Dept. 25.

SEE PLANT 1 REP. FOR ARA SERVICES

Astro employees located at Plant 1 may obtain discount tickets and information on other Astro Recreation Association offers and activities from the Plant 1 representative, Betty Howard, Room 386; third floor, Bldg. 51. Extension is 2063.

General Dynamics Golf Players Collect Trophies in NMA Meet

A GD/Pomona golfer took overall honors and 17 linksmen from Convair, Astro, and Electronics won trophies in the 11th annual NMA golf tournament held the weekend of May 4-5 over Palm Springs courses.

R. G. Antonoplis of GD/Pomona won low gross with 143 (70, 73) and low net, 133.

Convair prizes, based on Saturday putting scores, went to John Doig of Convair who took home a pitching wedge for the fewest putts and W. F. Van Dusen of Astro, a putter for the most putts.

Winners from Management Club entries at Astro, Convair, and GD/E were: Eagle Flight—C. Maxfield, Astro, second, 138.

Falcon Flight—E. Williams, Convair, second, 147.

Hawk Flight—Gerry Cox, Convair, first, 145.

Condor Flight—F. Pease, Astro-Edwards Rocket Site, second, 146.

Shrike Flight—Larry Failor, Astro-ERS, first, 134; Dick Gottschall, Convair, third, 145.

Finch Flight—M. C. Val Dez, Convair, second, 149.

Heron Flight—Fred Grossher, Astro, second, 140.

Robin Flight—G. Burks, Astro-ERS, third, 145.

Thrush Flight—J. H. Thompson, GD/E, first, 135.

Grouse Flight—J. Jodka, Convair, first, 135; J. Burtt, Convair, second, 145.

Jay Flight—D. Spencer, Convair, second, 144.

Parrot Flight—Jim Luckett, Convair, first, 136; E. Galbos, Astro-ERS, second, 145.

Coot Flight—Ernie Damarus, Convair, second, 148.

Vulture Flight—R. Miller, Astro, second, 142.

Pete M. Brown of Lockheed-California Co. was tournament chairman. Heading arrangements at GD/Convair and GD/E was Gerry Cox, assisted by Terry Kell. Art King was Astro golf chairman.

GD/E Squad Wins Trapshoot As Astro Takes Skeet Event

General Dynamics sharpshooters swept the field in annual IRC competition, hosted by the CRA-ARA Gun Club June 9 at Gillespie Field Range.

A five-man squad from GD/Electronics took top honors from the six teams competing in the trapshoot event, scoring a total of 237 out of a possible 250. Individual scores were: Howard Jacklin, 47; Jack Swank (CRA commissioner), Ken Faught, Wilbur Betteridge, each 48; and Steve Swank, son of Jack, 46.

Another GD/E team tied with GD/Convair's squad at 230 for second spot. Solar squads took third and fourth places, and Astro Management Club stood fifth with 213.

Skeet event was won by a GD/Astro team with 217 points out of a possible 250. John Draggie was high man with 48; H. Feehan, 47; Al Stroing, 42; Jim Hartman and E. Holland, both 40.

It was followed in order by GD/Convair in second spot with 210; Rohr, third, 200; Astro Management Club, fourth, 198.

Astro's rifle squad was second in its event with a score of 1,462, just 15 points behind first-place Ryan.

A perpetual trophy went to the winning trap team with each man on the first-place trap and skeet squads taking home individual trophies.

Coming events scheduled by the CRA-ARA Gun Club include a troy-type trapshoot at 7:30 p.m., June 28. Regular club matches will be held the first Sunday morning of the month, July 7.

A registered ATA trapshoot is set for July 14 and a registered skeet shoot for the following Sunday, July 21.

Gun Club Members To Host Dog Show

Gun Club members at General Dynamics divisions will turn their attention to another side of the hunting sport when they host a Dog Show for sporting breeds next month.

All GD employees and associate members of the CRA-ARA group are urged to turn out with their canines at the fun event, said CRA Commissioner Jack Swank. They have a month to start grooming their pets for the show, set for July 20, 1:30 p.m., at Gillespie Field Rifle Range.

Trophies will be given for best of show and best of breed in both puppy class, under four months; and adult class, four months and over.

Astro Pistol Team Wins IRC Gun Shoot

Astro's No. 1 pistol team took the pistol division of the recent IRC Gun Shoot, hosted by the CRA Pistol Club.

It headed a list of 12 teams with a total score of 1,167. Team members were Gordon McPherson, 296; Ralph Sanderlin, 288; Al Schindler, 294; Red Schneider, 289.

In second place was Convair's team with 1,137. Scores were: Joe Williamson, 286; Vern Mardis, 293, Jim Halfacre, 288; Ralph Picard of GD/E, 270.

Other teams ended the event in the following order: County Sheriffs No. 1, 1,126; Astro No. 2, 1,125; Pacific Telephone, 1,122; North Island NAS Civilians, last year's winner, 1,106; Ryan, 1,104; Sheriffs No. 2, 1,077; Solar, 1,062; Astro No. 3, 1,053; City Engineers, 985; Astro No. 4, 977.

Final Trips Scheduled For Airlift to Cape

The C-118 airlift, which for the last six years has linked Astro business travelers in San Diego with Air Force Missile Test Center at Cape Canaveral, will conclude operation this week.

Final eastbound flight will depart GD/Convair north flight gate at Lindbergh Field on June 28 with the terminal westbound trip June 29.



MANUAL REVIEW — Part of Air Force team meeting with GD/Convair technical publications personnel to review weapon loading handbook are (from left) A. M. Putnick from Middletown (Pa.) Air Material Area; Charles McCandliss, GD/Convair; John H. Campbell, AFWL, Kirtland AFB, N.M.; Howard Kennedy, GD/Convair chief technical publications; D. W. Hoffpauir, Ent AFB, Colo.; J. D. Meacham, GD/Convair; S/M Sgt. R. L. Wooley, 6002nd Stdn/Eval. Gr. (PACAF).

Weapon Loading Book Reviewed By Air Force, Convair Teams

A final review of the GD/Convair-prepared technical handbook on weapon loading for F-102s and F-106s was held at the San Diego plant this month by a team sent by Air Force Weapons Laboratories, Kirtland AFB, N. M.

Following the customary practice, AF and civilian specialists from AFWL met with GD/Convair technical publications editors and writers to go over each point of the handbook before printing. Title of the manual is "F-102/106 Special Weapon Loading and Delivery," prepared for all ADC squadrons using the Convair-built interceptors.

The June 5-14 conference was a follow-on to an actual loading exercise and inspection of procedures at Paine AFB, Wash., in April. On site were Charles McCandliss and Mike Ferris of GD/Convair.

At GD/Convair for the manual review were Capt. R. J. Montgomery, ADC, Ent AFB, Colo.; Capt. R. S. Greever, SAAMA, Kelly AFB, Texas; S/M Sgt. R. L. Wooley, Munitions Loading Standardization Br., 6002nd Stdn/Eval. Gp., PACAF; A. M. Putnick, equipment specialist, Middletown Air Material Area, Pa.; John H. Campbell, S.W. Technical Manual Manager, AFWL, Kirtland AFB; D. W. Hoffpauir, armament and munitions technical specialist, ADC, Ent AFB.

24 Years of Spare Time Study Climaxed by Bachelor Degree

Family of Ray Boggs (GD/Convair Dept. 6) can plan a picnic this summer and count on the head of the household being there, as Boggs puts away his school books for a couple of months.

The GD/Convair man wound up over 20 years of spare time undergraduate study when he stood up to receive his bachelor of science degree in mechanical engineering at San Diego State College graduation ceremonies June 6.

He took his first college course in 1939 at Pasadena City College, and in the years since has carried from two to 15 units a semester of night courses to complete his degree, marrying and raising three children in the meantime.

He enrolled first at SD State in 1941 and in 1948 was one of a group who, with the assistance of GD/Convair and North Island NAS training functions, helped develop a sustained evening program in engineering.

He has attended classes at any accessible school to help complete his requirements and major studies—San Diego City College, Grossmont College, and U. of California Extension, even taking his program requirements backwards, technical subjects first and general subjects last—to qualify for the coveted degree.

Boggs, who joined GD/Convair in 1956 after 15 years at North Island, said he had to hurry to finish college before his daughter, a junior at State. He intends to carry right on, entering graduate work this fall to work toward a master's degree in business administration.

GD/E Buyers Leading Loop

GD/E Purchasing leads the American League of the plant "slow pitch" softball competition with a 3-won, no-loss record.

In openers the GD/E team downed Fire Department, 7-2, went on the next week to defeat Fabrication, 18-2, and took last week's game from Tool Stores 25, 13-8.

Other American League scores during the first three weeks of play were: Tool Stores 25 over Fabrication, 12-2; Fire Department over Tools Stores 25 the next week, 7-6; and Fire Department over Fabrication on June 18, 8-1.

In the National League Hi-Lows are leading with a win over Material, 8-1, and over Accounting, 8-3. Accounting downed GD/E Material Control, 4-3, on June 6, and GD/E Material Control beat Material, 16-12, on June 13.

American League play is held Tuesday nights and National League games on Thursday nights, both at John Adams Playground, 35th and Adams Sts.

Give-Away Tickets To Be Drawn July 3

Lucky winners of next week's baseball drawing will get to see the Padres in action, for free, against Denver and Oklahoma City next month.

CRA will give away ducats to Padres home games July 5 through 15. Entries must be in the baseball drawing box at Convair employee services by noon of next Wednesday (July 3).

The San Diego ball club will play Denver ever day from July 5-12 and Oklahoma City, July 13, 14, 15.

To be eligible, slips must contain the following information: name, clock number, department number, shift, location, plant phone extension. Only one entry per person is allowed.

Sports & Recreation

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome. Master points play tonight (June 26).

CAMERA CLUB — Joint CRA-ARA meeting July 7, 7:30 p.m., Photo Arts Bldg., Balboa Park.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB — Joint CRA-ARA meeting Wednesday (July 3), 7:30 p.m., Floral Association Bldg., Balboa Park.

GLIDER CLUB—Meeting every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1.

GOLF — CRA tourney July 6-7, Coronado course.

GUN CLUB — Troy-type trapshoot June 28, 7:30 p.m. Regular club matches Sunday (July 7), both at Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m. No session July 4.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

PISTOL CLUB—Regular shoot July 14, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (June 27), 8 p.m., Harbor Drive headquarters.

SOFTBALL — Plant league games Tuesday and Thursday nights, 6:45 and 8:20 p.m., John Adams Playground, 35th & Adams Sts.

SPANISH—CRA-ARA classes: beginners on Monday nights, intermediate, Tuesdays, both 7-9 p.m., Convair cafeteria, Pacific Hwy.

STAMP CLUB—Meetings discontinued for summer months. Next meeting Sept. 5.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 1437, both Plant 1.

Reiter Scores In CRA Tourney

Al Reiter (Dept. 115) again topped links CRA competition with low gross score of 78 at the June 8-9 tourney held over Rancho Bernardo fairways.

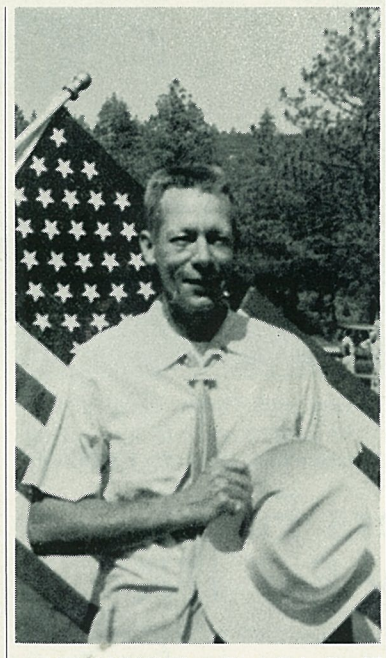
Other winners in the 0-16 flight were Ralph Way (Dept. 400), second low gross, 82. Bill McCarthy (Dept. 6) had a 68 for first low net; Jerry Swarts (Dept. 48), second low net, 70.

In the 17-21 flight Earl Carter (Dept. 115) was first low gross, 87; Glen Baker (Dept. 171), second low gross, 92. Tobe Hundley (Dept. 400) and Harry Achenbach (Dept. 6) tied for first low net with 73s.

Winners in the 22-and-over flight were Ernie Damarus (Dept. 400), first low gross, 91; L. McGinley (Dept. 171), second low gross, 94; Paul Bieberdorf (Dept. 6), first low net, 69; G. Watson (Dept. 400), second low net, 72.

STAMP CLUBBERS TAKE 'VACATION'

CRA Stamp Club will observe its usual summer vacation with no meetings scheduled for the months of July and August, announced Jack Benedict, commissioner.



NEW LEADER—Carl Scholl will head CRA Road Runners as president for coming year following election of officers during weekend outing to Pine Crest, CRA mountain resort.

Scholl to Head Road Runners

Carl Scholl of Dept. 6 took over the reins of CRA Road Runners as new president following election at the outing to Pine Crest the weekend of June 14-16.

He succeeds George Hurley Jr. of Dept. 16.

Other officers chosen were Loretta Devin, vice president; Regina Wawryzinski, re-elected secretary-treasurer.

Judicial board members are Ivar Peterson, Rolland Lathrum, and Charles Risner.

Teen-agers elected to represent the young folks of the trailer group were Tom Hurley and Carol Perkins. They will attend judicial board meetings and present suggestions or problems concerning the younger set.

Sixteen trailers camped under the trees at the CRA mountain resort near Julian with 48 members and guests joining in the Saturday potluck. Guest families joining the gathering were those of R. H. Browning, F. W. Stone, Harry Kelso, C. E. Roye, and Louis Rush.

Skiers Making Use Of Club Speedboats

With brighter skies and warmer weather to soften the dunkings, CRA Water Ski Club members are skimming Mission Bay waters on most weekends, said CRA Commissioner Gene Sevigny.

Although skiing with the club's boats is scheduled only when enough demand is expressed to make an organized trip worthwhile, Sevigny said that GD/Convair and GD/E skiers are enjoying the sport regularly. Dates and times will be set up and information given to all interested.

Skiers are urged to call Sevigny at ext. 1657, or Jack Loos, ext. 1437, both Plant 1.

Coin Club to Enter Exhibit at Del Mar

General Dynamics people will be especially interested in the novel exhibit of the CRA Coin Club in the numismatic division of the San Diego County Fair at Del Mar, which opens this weekend.

They will be able to view medals, service pins, and emblems associated with the company over the years.

John Barrett of GD/Electronics, and club president, urges everyone to take a look at the club display between the dates of June 28 and July 7.

Glider Designs Fill Air For June 15 Contest

Perfect weather and high enthusiasm of contestants combined to make CRA Aeromodelers' June 15 hand-launched glider contest the most successful of the year, Larry Peterson, club president, reports.

Eleven senior and four junior members of the group filled the air above the Clairemont Mesa flying site with a wide variety of designs as they tried to score three flights of three-minute duration.

First in the junior division was Robert Bowden, son of Dean Bowden (Dept. 6). His best flight of 1 min., 46.5 sec., marked the best junior flight of the day and was better than several of the seniors' flights.

Kyle Jensen, son of Jack Jensen, also Dept. 6, was second. George Dall placed third with better times than his father, John Dall, Dept. 6. Fourth place went to Steve Nissley, son of Paul Nissley, Dept. 6.

Ace modeler, Nat Antonioli (Dept. 6), was first in the senior division. His glider featured a dethermalizer, a fuse-operated device to bring the model down after the three-minute maximum.

Peterson, who came in second, regretted that his gliders lacked the device, as two were lost when they climbed out of sight in thermals.

Fudo Takagi of GD/Convair finished third with a well-proven model built in 1951. Less than 40 seconds separated the first three times.

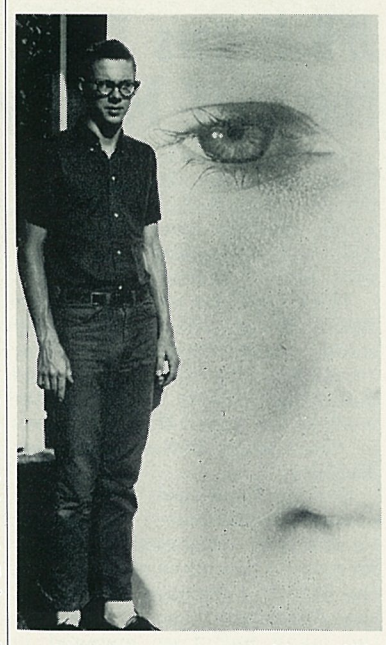
Other contestants were Wes Woodrey of Astro; Allen Shufeldt, son of GD/Convair's Albert Shufeldt; Don Larsen, CRA commissioner; Paul Nissley, Jack Jensen, John Dall, Phil Kessel, all Dept. 6; and Robin Bithell of Astro.

Enlarged 'Eye' Brings Fame

A few inches of a girl's face, snipped from a photo and blown up to gigantic proportions, is bringing "art" fame to its creator, Dennis Kidder, son of Milton Kidder, GD/Convair buyer.

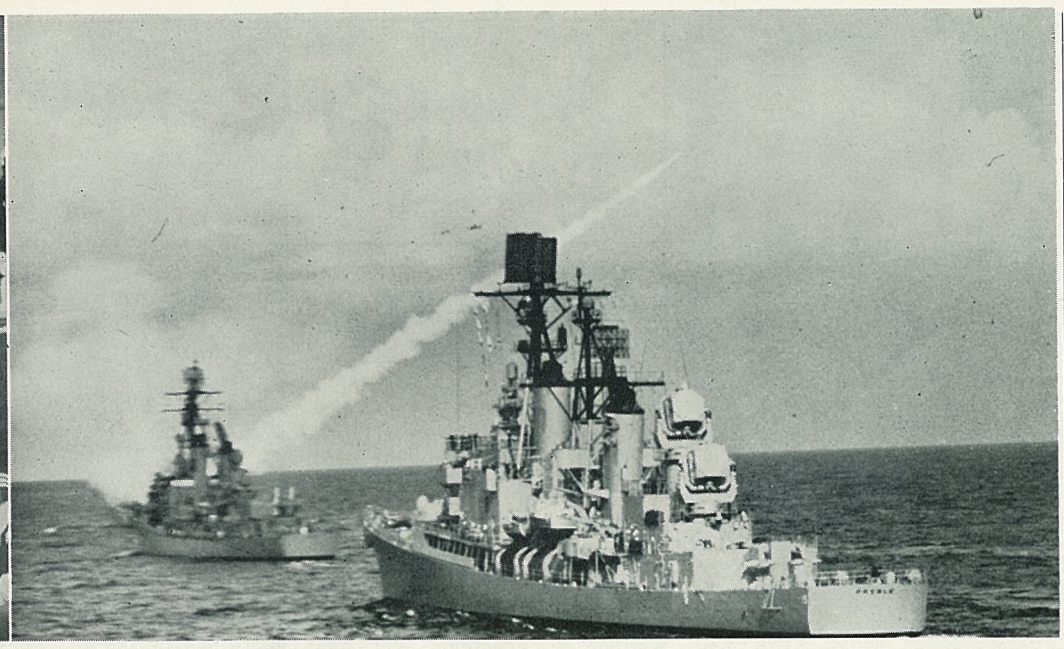
Dennis' huge enlargement, 7 ft. high and 3 ft. wide, will illustrate a demonstration on the television show, Teachers '63, next month. It will be shown on Channel 4, July 27, and the following week, Aug. 4, on Channel 10.

"The Big Eye," as Dennis has named his elephantine photo, was produced in his photography class at Helix High School under direction of instructor Clarence Jasmagy. The photo traveled with Dennis to Los Angeles last month when the coming TV program was taped at Los Angeles City College.



GIMLET — Ever-watching "Big Eye," of huge enlargement stares at Dennis Kidder, GD/Convair son who authored giant creation.





FOR PRESIDENT — Advanced Terrier and Tartar missiles produced by General Dynamics/Pomona scored perfect hits on jet drones during Navy's display of weapons for President Kennedy recently. President watched missile firings from carrier Kitty Hawk's flight deck. Tartar missile is shown being launched from one of guided missile destroyers.

As Usual, Dynamics Will Observe Fourth

Another one-day holiday is in store for General Dynamics people next week as they observe the Fourth of July.

Work will be suspended at all General Dynamics plants for Thursday only, except for necessary maintenance and security functions. Employees will report for work at usual shift times on Friday.

Officer Students Briefed on Missiles

Twenty-one officer students attending the U.S. Navy's postgraduate school, Monterey, Calif., were June 13 visitors at GD/Pomona. The officers were briefed on Advanced Terrier, Tartar, Mauler and Redeye missile programs and toured production facilities.

Tartars, Terriers Fired In Navy Show For JFK

Spectacular performances by General Dynamics/Pomona-built Terrier and Tartar missiles were included in the Navy's show of strength for President Kennedy off the California coast earlier this month.

The surface-to-air missiles fired from the carrier Kitty Hawk, frigate Coontz and destroyer Berkeley "scored perfect hits on jet drones at approximately 15,000 feet," according to press reports.

The President watched the missile firings from the carrier's flight deck. With him were his various military and naval advisers.

Following the demonstrations, President Kennedy in a brief speech said he would return to Washington "with a renewed pride in being an American, a renewed confidence in being a citizen of the greatest republic . . . guarded by the finest Army, Navy and Air Force in the world."

GD/Pomona's field operations and flight analysis personnel provided technical assistance for the Advanced Terrier and Tartar demonstrations and received a "well done" from RAdm. David Lambert, USN, commander of Cruiser-Destroyer Flotilla Nine.

"The supporting effort was considered to be a major contributing factor to a most successful operation," Admiral Lambert said in a message to GD/Pomona.

GD/Pomona representatives aboard ships for the demonstration included: Kitty Hawk, T. L. Deno; Columbus (flagship of Admiral Lambert), E. A. Bergum; Preble, C. V. Hill; Berkeley, J. R. Beesley and W. A. Dean; Hoel, J. E. Gilger.



PROUD — Maj. Gen. Ben I. Funk, commander, Space Systems Division, AFSC, accepts Group Achievement Award from President John F. Kennedy. Presented at White House, award was for "managing the development and launching of the Atlas booster used in the space flight missions of the United States in Project Mercury." Gen. Funk credited industry with key roles in making award possible. Astronaut Gordon Cooper is at President's left, Vice President Lyndon B. Johnson is at right.

JFK Honors Teams Responsible For Atlas' Mercury Launch

Air Force Systems Command's Space Systems Division, commanded by Maj. Gen. Ben I. Funk, recently received a Group Achievement Award from President John F. Kennedy.

The award was presented at the White House. The accompanying scroll stated the award was for "managing the development and launching of the Atlas booster used in the space flight missions of the United States in Project Mercury."

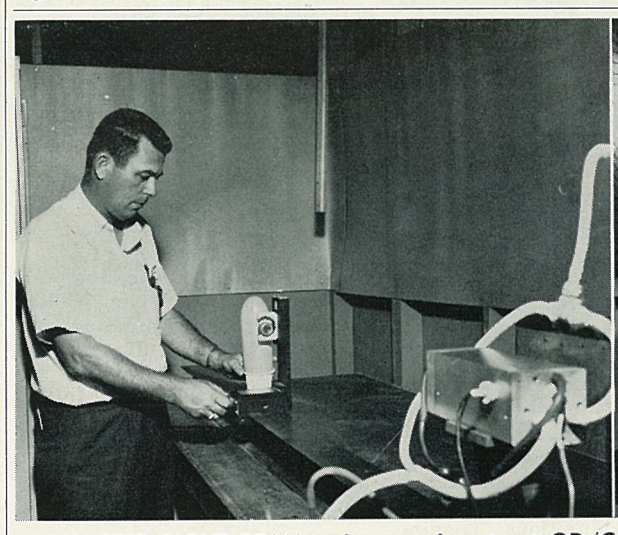
General Funk said, "This extraordinary achievement is a credit to everyone concerned. Our SSD Mercury-Atlas management team, the 6555th Aerospace Test Wing, the Aerospace Corporation, and the many industries engaged in the program can all take great pride in placing Major Gordon Cooper and the other Mercury astronauts successfully in orbit."

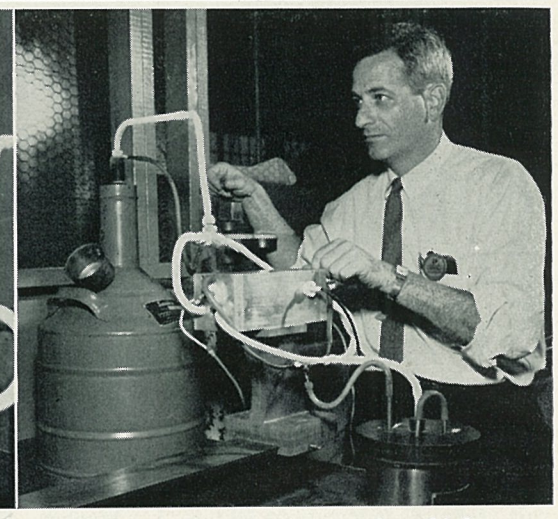
Vice President Lyndon B. Johnson read the citation accompanying the award.

Following White House ceremonies, General Funk attended a joint session of Congress honoring Cooper and later the State Department luncheon for the same group.



"Sa-ay! You're a pretty good fisherman—I'll mention it to the next farmer who might want to hire you."





DIRECTED LIGHT BEAM — In experiments at GD/Convair with Laser, device to produce high-power pure beam of light which may, eventually, revolutionize manufacturing methods, Charles Maikish, Dept. 23 (at left), sets up balloon target for beam which will travel from aluminum box-like container, Laser head, at right to be intercepted by lens and concentrated on specific point. In photo at right M. D. Weisinger, GD/Convair chief of manufacturig research and development, adjusts controls of cooling system. Note frost formed on tubes carrying liquid nitrogen for cooling of ruby, heart of Laser.

GD/Convair's Laser Research Aimed At Fast Welding, Cutting Technique

A giant stride forward has been made in Laser research at General Dynamics/Convair with updating of the division's "pure" light beam device which may, some time in the future, replace conventional tools for fast welding and cutting of exotic materials.

Experimentation with the new method of amplifying light waves, known as Laser (Light Amplification by Stimulated Emission of Radiation) has been carried on at GD/Convair for more than a year under direction of M. D. Weisinger, chief of manufacturing research and development.

A unit with infinitely greater capabilities than the former experimental unit is now in operation in the manufacturing research laboratory. It was made possible by acquisition of two important components—a large synthetic ruby of flawless quality, 6⅝ inches long and half-inch in diameter, and a flash tube powerful enough to energize, or laser, the ruby.

Weisinger explained that the division's Laser efforts waited months for the "state of the art" to catch up. Only recently has a crystallizing process been perfected to produce high quality rubies of the size required to give out a pure shaft of light powerful enough for industrial uses.

The Laser is constructed about a ruby crystal set in light oscillation to give off a coherent, or straight, beam of visible red light. When focused on an object through a lens, it produces temperatures to 75,000 F. degrees, enough heat to vaporize any known material.

The beam would be capable of piercing any material regardless of properties, said Weisinger. It will be able to pierce holes of smaller diameter than ever before at amazing speed.

"As an industrial tool the Laser will find wide application in the field of microminiaturization of electronic components, particularly in semi-conductors," he continued.

"Adaptation of the Laser beam to the welding process may provide, in years to come, a better means for joining exotic metals anticipated for rockets, missiles, supersonic aircraft, and other space vehicles. It does not require operation in a vacuum chamber, thereby reducing equipment and set-up costs.

"Laser's ability to create an extremely accurate 'line in space' shows great promise for optical tooling application. Hundreds of feet could be spanned by Laser, which could be operated by remote control, and tolerances maintained within millionths of an inch. Its application to large wing sections of a few hundred feet, or its use in constructing giant missiles of the future, of a thousand feet or more in length, will aid in producing almost perfectly aligned assemblies."

Current research in GD/Convair laboratories is concentrating on increase of pulse rate of the Laser to produce a continuous output of the light beam, which would give an almost continuous action in cutting or welding.

"To achieve a more continuous light beam we are experimenting with a revolving drum with eight Xenon flash tubes which can be fired individually or in sequences of two, four, and eight," Weisinger said.

"After additional testing we will be able to determine and control the energy level and output required for welding and cutting."

GD/Convair's research team, which in addition to Weisinger included George Bartolomei, senior manufacturing development engineer, now at GD/Astro; Roger Beemer, also now at GD/Astro, who designed the electrical power installation; and Charles Maikish, Dept. 23 technician, were involved with one of the first Laser welding experiments in the country at Technical Research Laboratory, Syosset, Long Island.

Since then, research and experimentation in the revolutionary harnessing of light beams has been continued at GD/Convair at a minimum of expense and under austere conditions, stressed Weisinger. Very little material has been purchased for construction of the device and its electrical power supply and cooling system. Most of the components were designed and fabricated within the department from scrap material. The present stage of development, which would ordinarily cost as much as $50,000, has been reached at a mere fraction of that amount.

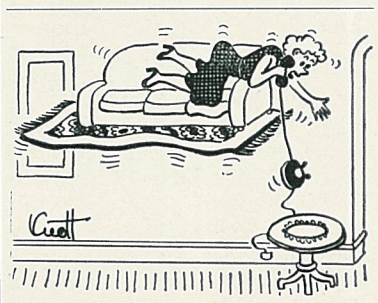
Other General Dynamics divisions have entered the field, working along similar lines in preliminary investigation and basic research.

DYNAMICS QUALITY REPS GET TOGETHER

General Dynamics Corporation quality control working committee met earlier this month at GD/Astro with representatives of 10 divisions attending.

The group was greeted by L. I. Medlock, GD/Astro manager of quality control; and R. F. Martin, GD/Electronics; C. W. Bailey, GD/Pomona; and G. W. Turner, GD/Convair, moderated discussions during the two-day meeting.

Divisions represented included GD/Astronautics, General Atomic, Canadair Ltd., Convair, Electronics-Rochester, Electronics-San Diego, Electric Boat, Fort Worth, Liquid Carbonic, Material Service and Pomona.



"Ajax Furniture? Are you sure that the rug I bought didn't come from India?"

GD
MAIL EDITION

GENERAL DYNAMICS NEWS

Vol. 16, No. 14 PUBLISHED BY GENERAL DYNAMICS CORPORATION Wednesday, July 10, 1963



INDONESIAN VISITORS—Air Marshal R. Iskander of Indonesia (second from left) converses with Mr. J. Thetekdjoe, Garuda Airways resident representative, during inspection of Garuda 990A at GD/Convair during recent visit to San Diego. At far left is Mr. M. H. Panggabean, First Secretary, Economic Section of Indonesian Embassy, with other members of entourage at right. Center is GD/Convair's A. J. Savard, who conducted tour of production facilities.

SATS Production Line Checked

Pre-production proofing of machines designed and built by General Dynamics/Convair especially for turning out aluminum core landing mats on the fully-automated SATS assembly line began late last month.

The "translator" line set up in Bldg. 2 at GD/Convair Plant 1 is scheduled to swing into action at a mat-a-minute rate later this month. Mats will be produced at GD/Convair for one test airfield to be used by Marine jet fighter craft under a contract from Naval Air Materiel Center, Philadelphia, Pa.

Major tooling components added to the line, which were designed and built by GD/Convair tooling department specifically for the aluminum core mats, include the core welding machine, core milling machines, and an epoxy potting station—a novel tool for filling all voids around the inside edges of the completed panel.

These machines are in addition to the original milling machines and welding machines designed at GD/Convair for the original SATS wood core concept.

W. G. Martin, SATS tool engineer, explains, "The tooling approach for the SATS line differed considerably from the normal aircraft type tooling approach in that the program requirements of rapid production and continuous application made reliability, minimum maintenance, and specialization mandatory.

"These tools also were designed with the operator in mind. We have made extensive use of electronics, hydraulics, and pneumatics to perform the motions and functions, leaving the operator the task of monitoring a control panel. After initial proofing and adjustments, we believe these operations will be described as effortless and 'smooth.'"

A specific example of "smooth" is the operation of the special mills for machining 4-foot-long mat edge members and locking bars. An eight-sided drum rotates eight holding fixtures past an arbor of milling cutters and then deburring brushes, and produces finished milling parts at a rate of four per minute. The operator simply snaps the extruded aluminum stock into the fixtures as they pass by.

Two welding machines attach skin panels top and bottom automatically by push button control. In these welding machines a shuttle arm reaches out and pulls a part-loaded pallet into the machine where water-cooled platens sandwich the parts while four automatic welding heads weld the edges of the skin panel to the four extruded edge members, making a pan or completed panel. The finished article is automatically ejected back on the line. The whole cycle takes less than a minute.

The two new tooling operations—the core welding machine and core milling machines—added to the line to support the cast aluminum core design concept were developed with the same principles in mind.

The welder, much like the pan welder, reaches out and pulls two

(Continued on Page 2)

ELECTRO DYNAMIC MAKES COME-BACK FROM NEW PLANT

Electro Dynamic Division of General Dynamics, whose Bayonne, N. J., plant was destroyed by fire April 20, is now "back in business," operating from a new facility 16 miles away at Avenel, N. J.

The new plant at Avenel, formerly occupied by Art Metal Corp., provides 350,000 sq. ft. of working space, approximately 30 per cent more than the old plant at Bayonne. The new plant address is 150 Avenel St. The phone number is 636-9100, area code 201.

Within a week after the fire, more than 90 per cent of all orders had been reconstructed and all customers contacted at least once. An inventory of motors in field warehouses helped maintain the flow to customers.

Navy Bureau of Ships officials opened files to E. D. representatives the first working day after the fire and reproduction of plans, drawings and correspondence, to replace files destroyed in the blaze, began at once. Navy production priorities were being established at the same time. Meanwhile, Electric Boat Division also was supplying drawings for priority items.

Critical Polaris submarine motors were first on the priority list. On April 30 crews were given six weeks to produce the first submarine motor. The first motor was shipped two days ahead of

(Continued on Page 2)

GD/Astro Field Teams Will Update Six Bases

Veteran General Dynamics/Astronautics field teams will return to six missile bases later this year to incorporate latest missile technology in Air Force Atlas F-series installations. Some work is already in progress.

The project was discussed recently by W. L. Van Horn, GD/Astro vice president and program director—Atlas weapon systems.

"As currently programed, these teams will average between 300 and 400 civilian technicians during a one-year period, increasing to more than 500 during peak periods," he said. "GD/Astro has also participated in similar programs for Series D and E Atlas horizontal launch sites."

F-series silo installations involved are at Lincoln AFB, Neb., Schilling AFB, Kan., Altus AFB, Okla., Dyess AFB, Texas, Walker AFB, N.M., and Plattsburgh AFB, N.Y.

Van Horn said each launch complex and supporting service installation at these sites will phase through the program, which is slated to continue into late 1964.

Air Force officials have likened the F-series up-date program to modernization programs through which improvements are added to operational aircraft.

GD/Pomona Contract Award Announced

Receipt of an $820,000 contract from GD/Pomona was announced last month by Herman Schaevitz, president of Schaevitz Engineering, Pennsauken, N. J. The contract was for production of accelerometers for use on a major missile program.

Bond Buying Nears Target

Bond buyers at General Dynamics divisions of Astronautics, Convair, Electronics, and Pomona joined in whole-heartedly to boost participation near the 70 per cent goal as incomplete tallies were taken last week.

GD/Astronautics and GD/Convair both went over the mark. GD/Astro had pushed its percentage to 73 per cent. GD/Convair's participation stood at 70.9 per cent at last reading and could well go higher by the time final count is made of people on vacations and sick leaves.

GD/Electronics nearly doubled its participation, raising the number of bond buyers through payroll deduction to 60 per cent.

Percentage of bond buyers at GD/Pomona increased to 65 per cent of employment during the June 17-30 campaign. During the drive, 1,650 new buyers were signed and 318 employees increased purchase amounts.

Speedy Printer Sold by GD/E

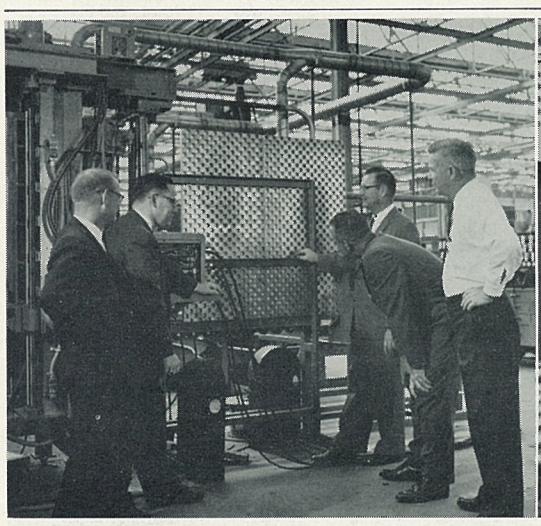
General Dynamics/Electronics-San Diego has sold a high speed electronic printer subsystem for use with one of the world's largest computers, it was announced last week.

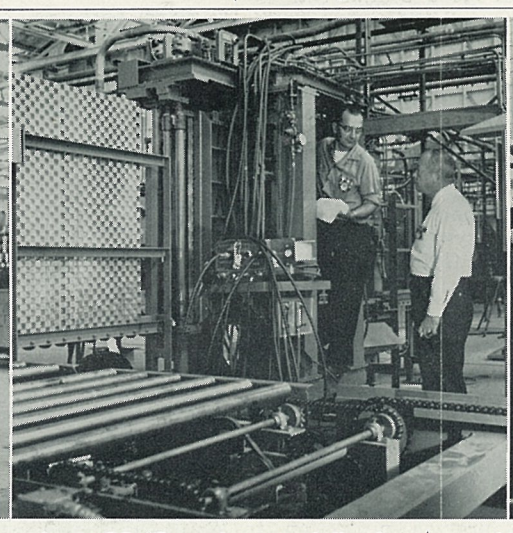
The equipment was purchased by The MITRE Corp., Bedford, Mass., a nonprofit system engineering organization, for its work in support of the Air Force Electronic Systems Division (ESD).

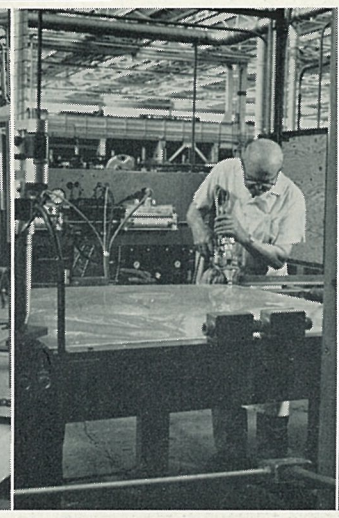
At ESD's Systems Design Laboratory, which is operated by MITRE, seven S-C 3070 High-Speed Electronic Printers initially will be supplied by GD/Electronics to be used in connection with the IBM 7030 computer now used to simulate operation of major military command and control systems during the conceptual planning and design stages.

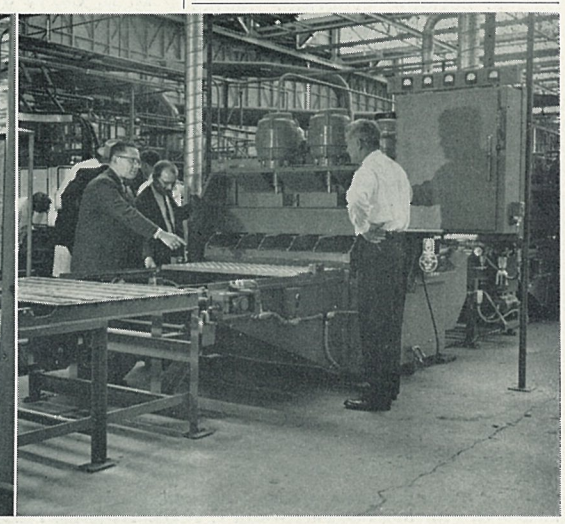
The GD/Electronics equipment will print text and plot graphic information compiled by the computer for use at positions in experimental command posts. Each S-C 3070 is capable of printing in excess of 3,000 words per minute.

In addition to the seven printers, General Dynamics is providing the control group electronics. This equipment functions as a complex switching network between the printers and the computer. The control group electronics, which can feed information simultaneously to as many as 16 printers, will check itself and the printers continually for malfunctions, and allows each of four computer channels to simultaneously operate any one or combinations of the printers.

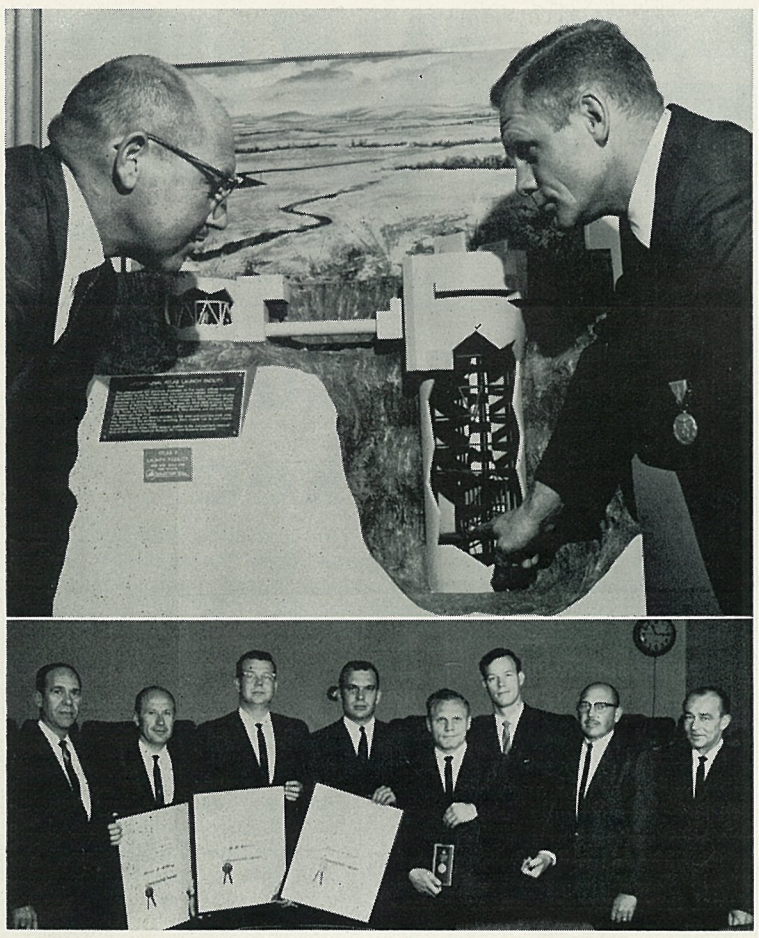








SATS PROOFING—Unique machines, designed at GD/Convair especially for automated SATS mats line, go through proof checks early this month as "mat-a-minute" line is readied for actual production. At far left, S. E. Smith, tooling specialist; W. G. Martin, SATS tool engineer; O. W. Sweetland, tool manufacturing superintendent; E. H. Damarus, chief tool engineer; H. W. Meyers, tool fabrication foreman, examine SATS core as it passes through GD/Convair-designed welding machine. In next photo Fred Walrod, Dept. 401-5 leadman, and Bill Ganoe, tool design engineer, are shown at welding machine. In third photo Al Kirsch of Dept. 401-5 tests potting tool for shooting epoxy into mat to form solid connection between edges and casting. In last shot, Martin, Smith, Meyers watch proofing of new-type milling machines. Twin machines stand in tandem on automated line. They are in addition to those used in original SATS wood core concept.



CITED—GD/Astro men were honored by Air Force recently for actions during accident at Dyess AFB. In top photo, Nels E. Erstad, right, explains location to R. C. Harbert, director of customer service. Below, from left, are E. D. Bryant, G. S. McHenry, M. W. Beheler, T. S. Strait, Erstad, Charles Jones, Harbert, W. L. Van Horn.

SATS Production Line Prepared For Action

(Continued from Page 1)

cast core segments into a water-cooled pressure platen. Here two automatic welding heads, one top and one bottom, traverse the length of the castings, making them one unit. After automatic ejection, the casting is fed into unique twin mills. The first mill finish-machines one side of the casting to a critical surface finish and dimensional tolerances and the second mill does the other side to an overall part thickness of 1.105, plus or minus ten-thousandths. Parts are "flipped" between mills by a turnover device. This allowed economical use of duplicate design and fabrication of milling machine components.

"I am confident that the tooling in our automated line is equal in quality and performance to any I've seen in the years I have been associated with companies specializing in automation. And, they were produced without extravagance or waste, and well within the budget and schedule," concluded Martin.

NAVY INCREASES TEST FACILITIES

Addition of new test facilities totaling $2,128,674 to the Ordnance Aerophysics Laboratory at Daingerfield, Texas, was announced June 25 by the United States Navy.

The new facilities will be completed within the next two years, according to the Bureau of Naval Weapons. Replacement value of the laboratory, based on present day costs, would be in excess of $30,000,000.

General Dynamics/Pomona, Daingerfield Division, the operating contractor for the laboratory since its inception in 1945, will be the prime contractor for the facility additions.

Electro Dynamic 'Comes Back' From New Plant at Avenel

(Continued from Page 1)

deadline.

"Shock mounts needed for shipping the first motor were flown in from E.B. at 2 in the morning . . . bearings with a normal lead time of 40 weeks somehow appeared on schedule . . .

"There has been no delay in the Polaris or attack class submarine building program, thanks to this recovery program," a division publication reported.

"These results could be accomplished only by people of the caliber and dedication that we feel is General Dynamics' greatest asset," Algie A. Hendrix, Dynamics vice president-industrial relations, commented. "We are proud of the progress to date and confident of E.D.'s ability to support President Roger Lewis' statement following this fire that 'all commitments to customers will be met with a minimum of delay.'"

R. B. Carey Jr., E.D. president, added:

"I was confident that this E.D. group could accomplish the task of recreating a business. The results, however, have exceeded my most optimistic hopes."

General Dynamics NEWS

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* * *

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Eleven GD/Astro Men Decorated For Bravery

Eleven GD/Astronautics employees have been honored by the Air Force for voluntarily risking their lives to save a $10 million Atlas missile launch complex from destruction.

Presentation of awards was made late last month by Maj. Gen. W. Austin Davis, commander, Ballistic Systems Division (AFSC), in ceremonies at Norton Air Force Base.

GD/Astro employees Nels E. Erstad, Jack E. Kay and Alois F. Pajak received the second highest honor the Air Force can bestow in peacetime, the Exceptional Service Award.

Receiving the Air Force Scroll of Appreciation signed by Eugene M. Zuckert, Secretary of the Air Force, and Curtis E. Le May, Air Force chief of staff, were Charles Jones, Robert C. Morris and Richard L. Oblander.

To Earl E. Coon, Rene C. McDowell, M. W. Beheler, George S. McHenry and Thomas S. Strait went the BSD Commander's Award.

Because of distant assignments, some were unable to attend the ceremony.

Awards resulted from a mishap in September, 1962, when, during a demonstration countdown on a Series F Atlas at a Dyess AFB, Texas, launch complex, a heavy safety platform was torn from position and hurtled to the bottom of the 150-foot deep launch silo.

As the falling platform crashed through missile support equipment it caused damage resulting in what Gen. Davis termed "extremely hazardous conditions."

The GD/Astro men entered the silo in an emergency action to avoid rupture of the Atlas and to clear the silo of explosive oxygen vapors.

Gen. Davis credited the team with saving the complex from total destruction.

Representing GD/Astro management at award ceremonies were W. L. Van Horn, vice president and program director—Atlas weapon systems, E. D. Bryant, vice president - operations, and R. C. Harbert, director of customer service.

EIA Re-elects Horne as Head For 2nd Year

C. F. Horne, president of General Dynamics/Pomona, has been re-elected for a second term as president of the Electronic Industries Association.

The EIA is the trade association for the entire electronic industry.

Horne was chosen again to head the association at its annual convention held recently in Chicago. Active in the association for the past ten years, he has served as a member of the board and as president for the past year.

A vice president of General Dynamics Corporation, Horne has been with the company since 1953. He is a graduate of the U.S. Naval Academy and has a Master of Science degree from Harvard. He was one of the pioneers in the application of electronic concepts in the U.S. Navy.

While on loan from the Navy in 1949-50, Horne served as acting director of the Federal Airways Division of the Civil Aeronautics Administration, and following his retirement from the Navy as a rear admiral in 1951 he was named by the President as Civil Aeronautics Administrator, serving until 1953. In 1952 he was also a member of the Presidential Airport Commission.

S-C Wins New AF Contract

Contract to produce two 600-line telephone switchboards for use in Korea has been awarded to Stromberg-Carlson, a division of General Dynamics, by Rome Air Material Area, U. S. Air Force.

Three attendant cabinets will be provided with each switchboard which will serve as a private branch telephone exchange.

These private branch exchanges are similar to those being used by the military in installations throughout the world. They employ vertical wirebanks to assure dust-free electrical contacts and flat XY Universal switches. These plug-in type switches are designed for interchangeable use as line finders, selectors or connectors thus achieving economy and ease in maintenance.

XY Universal switches are used in Stromberg-Carlson telephone systems which are now serving more than 3,000 commercial exchanges as well as the many military installations.

More Army and Navy Funds Earmarked

A $3,636,600 contract for continued development of the Mauler weapon system was awarded June 29 to General Dynamics/Pomona by the U. S. Army.

Mauler is a compact, rugged and highly mobile air defense system under development for the Army.

Contracting office for Mauler is the Los Angeles Procurement District. Mauler is being developed at GD/Pomona as part of the Army's modernization program to provide protection to forward battlefield units.

* * *

The U. S. Navy last week awarded a $3,099,996 contract to GD/Pomona for continued production of Terrier and Tartar guided missiles.

Over $500,000 Cut in Costs Scored in 1963

Over half of the million-dollar goal in cutting operating expenses at General Dynamics/Convair, set for 1963, has been reached in the first six months of the drive.

By the end of June savings had reached $580,000, reported Resources Economics, control center which monitors the division's cost-cutting projects.

GD/Convair President J. H. Famme expressed his satisfaction in the cooperation of all departments in reduction of utility costs by restricting use of telephones, electricity, water, steam, air, and similar services and equipment.

"This wholehearted participation in GD/Convair's Resources Economics effort to reduce expenses is a source of real encouragement to me," he said.

"We are achieving a fine record in reducing utilities costs. Yet, further economies are possible to bring utility costs even lower. I urge all of you to increase your personal vigilance to see that valves and switches are turned off when not needed, and that leaky air hoses, pipe joints, valves and faucets are reported and repaired promptly.

"I am sure that this reminder of the importance of all our conservation efforts will prompt you to continue the careful monitoring of our areas, and to be alert in saving overhead dollars wherever possible."

GD/Convair supervisors are urged to contact Resources Economics at ext. 1640, Plant 1, for assistance on any of their utility problems, or whenever they have suggestions which would result in further savings.

Centaur Flown to Ohio For Testing at Lewis

A General Dynamics/Astronautics-built Centaur space vehicle has arrived at NASA's Lewis Research Center, Cleveland, Ohio, for testing.

Centaur was air-lifted to Lewis from Cape Canaveral where, in combination with an Atlas space booster, it has been subjected to pre-launch operation tests at Complex 36A.

At NASA's Cleveland facility the vehicle will be exposed to simulated conditions of outer space in Lewis Center's space power chamber.

With exception of main propellant flow and engine ignition, all Centaur's systems will be operated in the chamber to help NASA engineers determine functional performance, reliability and life and cycle limits of the various systems.

This vehicle (designated 6A) although fully flight-equipped, will never fly. It will, however, provide data for utilization in actual Atlas-Centaur launches later this year.

Centaur is scheduled to soft-land the Surveyor spacecraft on the moon for preliminary lunar surface studies which will aid manned landings later in this decade.

At GD/Astro the Centaur project is directed by Grant L. Hansen, vice president and program director.

Gordon Pelton New Legion Commander

Gordon Pelton (Dept. 42, GD/Pomona) has been installed as commander of American Legion Post 112, Ontario. With a membership of 1,317, the post is the third largest in the state of California which boasts almost 900 Legion units.

Pelton has been a member of Post 112 for three years and previously served as historian and vice commander. His wife, Bonylin B. Pelton (Dept. 27), is first vice president of post Ladies Auxiliary.



AT CLEVELAND—Centaur space vehicle is unloaded from Air Force C-133 transport after flight from Cape Canaveral to NASA's Lewis Research Center. The 29-foot long vehicle will receive exhaustive testing in Lewis space power chamber.



NO GUESSWORK—Jim and Darla Mortensen demonstrate proof that new home-built suitcase-size electronic computer can predict—on the average—outcome of make-like bets on a roulette wheel. At work, Mortensen is a GD/FW laboratory technician.

What About 00?

Computer Keyed to Calculate Odds on Roulette Wagering

Jim Mortensen only bets on a "sure thing," which in this case happens to be his own home-built roulette computer.

"It hasn't failed to win for me yet," confides the IVU laboratory technician at GD/Fort Worth, who hastily admits that most of his winnings have been on paper.

But he and wife Darla have a standing offer from a Las Vegas croupier to try their luck—and machine—at any time, and they plan ultimately to do so.

Mortensen's computer, which is built into a small leather overnight case, can handle only bets offering up to 2-1 odds. For example, any one of the roulette wheel's 36 numbers can pay off at 2 to 1 on eight different combinations — odd-even, red-white, first 12, and so forth.

As the wheel goes into action, the machine stores up a quick history and within minutes is flashing on lights which tell Mortensen where to place his money.

The machine can't predict each spin of the wheel "correctly," but it can—Mortensen claims—unfailingly predict a "trend."

"For example," he said, "if the computer signals that the ball will stop in the 1-12 number group, I know for certain it will stop there within four rolls. If it takes more than one roll, you simply increase your bet each time to compensate for any earlier 'losses.'"

The principle applies to other operations of the wheel.

"Everything tends to equalize itself," Mortensen points out. "This is the theory on which the computer is built. In industry, we call it the law of probability. If you flip a coin long enough, it'll come out 50 per cent heads, 50 per cent tails."

Mortensen, who started taking radios apart when he was three years old (and just recently learned to put them back together), built the machine in about nine months, with help from his brother, Jack, a tool designer at Boeing-Wichita.

Innards of the computer — capacitors, resistors and such—had to be special-ordered, Mortensen said. The relays were taken from a pinball machine and modified.

Around the lab, Mortensen is jocularly alluded to as the "man who broke the bank at Monte Carlo." And his compatriots may be closer to the truth than they think.

Mortensen has on the drawing boards an "advanced computer" capable of taking all odds on any number on the wheel. Only obstacle at present is a $15,000 building cost.



"Okay, everybody! The sodas are on me."

Air Marshal Of Indonesia Tours Plant

Air Marshal R. Iskander, Minister of Air Communications for the government of Indonesia, spent part of a day last week (July 3) at the General Dynamics/Convair plant in San Diego.

He inspected the 990As slated for Indonesia's Garuda Airways, was briefed on pilot and maintenance training set up for Garuda flight and ground crews, and received information on current GD/Convair programs.

Air Marshal Iskander is making his United States visit to study the field of civilian air operations, under sponsorship of the Government Affairs Institute, Washington, D.C.

Budget Executives Elect Fred Minter

Fred N. Minter of GD/Convair was chosen president of the San Diego Chapter of the Budget Executives Institute at the 13th annual conference held recently in San Francisco.

Minter, manager of indirect budgets, also conducted a panel on "The Research Budget," during the conference. Other General Dynamics men participating on the panel were H. Carter House, chief accountant at General Atomic, and Gary Gonlag, GD/Astronautics supervisor of indirect budgets.

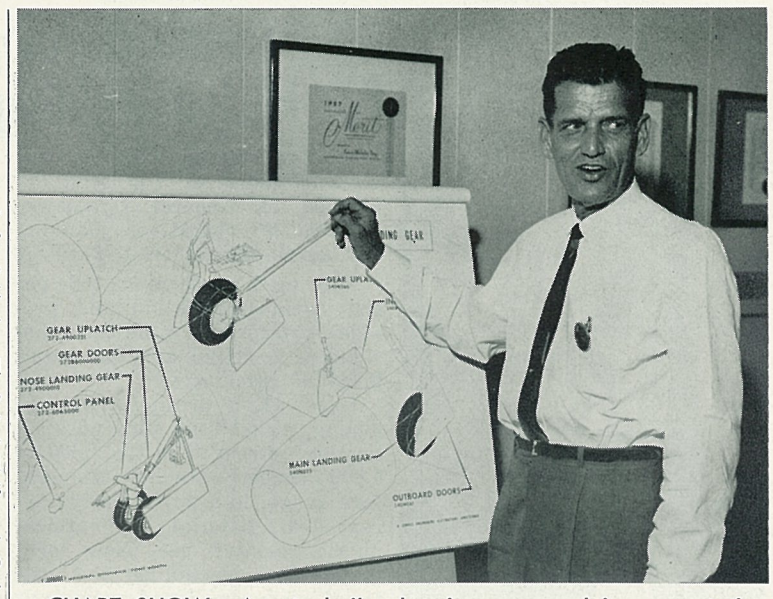


CHART SHOW—Aerotechniks drawings as used in presentation are demonstrated by J. H. Herbert, GD/Fort Worth engineering publications supervisor.

'Aerotechniks' Devised To Disseminate Data

A new method for disseminating technical information at GD/Fort Worth offers enormous potential savings in time and effort.

J. H. Herbert, engineering publications supervisor, evolved the "controlled graphic" method over the past few years, and even coined a name for it: aerotechniks.

Briefly, aerotechniks involves a uniform method of presenting drawings of technical data to all necessary functions simultaneously.

"Previously, the various manufacturing and design functions operated in an orderly sequence," said Herbert. "But today, product design, tool design, plant layout, material processing and other functions require drawings at the same time."

Accordingly, illustrators from Herbert's group draw the many individual parts of a component —as they did in the manufacture of two B-57 wings here — and piece them together in a series of pictorial drawings and exploded views.

"And herein lies the great savings," Herbert said. "Formerly, each group involved in a project would have its own drawings made at different sources. This was quite costly, since time studies have shown that about 75 per cent — or more — of the time spent by creative people was in familiarizing themselves with the job."

Under the regular method, if it took an artist about 10 hours to draw a landing gear, for instance, and this drawing was required by 15 different sources, the total time spent would have been about 150 hours. But with one source making all drawings, compiling them, and issuing to all 15 groups, most of the duplication is eliminated.

Using drawings prepared from a combination of scaled aerotechniks, "the exact location of mechanical or electronic components is comparatively simple," Herbert said. "For instance, the location of a heat exchanger in a wing area allows the designer to see his part in place without awaiting completion of a mock-up. This would allow him to easily check the clearances on tube and harness routing on all installations, and it would also help the structural designer in locating necessary cutouts and open areas needed for a certain system."

Herbert says that aerotechniks has paved the way for the first time for substantial savings in the incubation or "idea" time spent on such projects.

Formerly, he said, most savings were effected in such areas as preparation, distribution and reproduction—a relatively minor part of the overall cost.

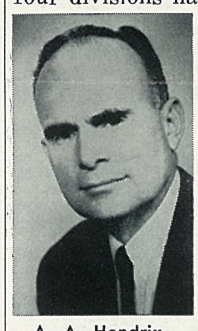
"Transmitting technical information by presenting three-dimensional objects on a two-dimensional plane is similar to regular orthographic drawings, but differs in that it may be easily understood by people with little training in print reading," Herbert said.

In addition to their concurrent usage by a variety of departments, aerotechnik drawings can be applied to many other media.

Flip charts, brochures, miscellaneous engineering reports, transparencies and flip charts for presentations and training purposes, and technical manual illustrations all can be made from a basic aerotechnik drawing.

Seven Sons and Daughters Earn General Dynamics Scholarships

Five sons and two daughters of General Dynamics parents in four divisions have received General Dynamics Corporation Merit Scholarships for the year 1963.



A. A. Hendrix

Algie A. Hendrix, General Dynamics vice president - industrial relations, announced that GD/Astronautics, GD/Electric Boat and GD/Fort Worth each had two winners, and GD/Convair, one. All of the young people, top students in their schools and at the head of the list in National Merit Scholarship qualifying tests, will receive awards ranging from $1,000 to $6,000, spread over four years of college.

"General Dynamics takes great pride in the accomplishments of these fine young people," Hendrix commented.

Winners are:

GD/Astronautics — Sylvia A. Kalitinsky, daughter of Andrew Kalitinsky, program director — NOVA, Dept. 504-00; Theodor G. Tanalski, son of T. T. Tanalski, Dept. 592-0, applied research lab, and Mrs. Tanalski, formerly of GD/Convair inspection.

GD/Convair — James S. Warniak, son of Stephen Warniak, Dept. 16-1, technical publications.

GD/Electric Boat — Pamela J. Bowler, daughter of Thomas Bowler, draftsman; Kenneth R. Goodearl, son of Ralph Goodearl, electrical supervisor.

GD/Fort Worth — Richard S. Brandt, son of Fred Brandt, Dept. 160 senior design engineer; Hervey S. Hutchins IV, son of H. S. Hutchins III, project design engineer.

Sylvia Kalitinsky is a recent graduate of Brearley School for Girls, New York, where she won prizes in poetry and math and was a member of the volleyball team. She plays the cello and has a keen interest in dramatics—she has acted in, and done stage settings for, a number of amateur performances.

Two years ago she attended Junior Playmakers Summer School for Drama at University of North Carolina, where she won first prize as best all-around student.

This fall she will enter University of California at Berkeley where she will major in mathematics.

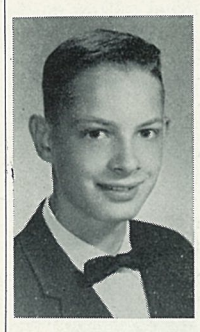
Ted Tanalski is a June graduate of La Jolla High School where during his senior year alone he was recognized for participation in Naval Electronics Lab competition; received the Bausch & Lomb award as outstanding science student; Bank of America trophy and certificate for 100 per cent membership in California Scholarship Federation, and honor certificate from his school.

He received a first-place award in the junior physics division, Greater San Diego Science Fair in 1960, and this year repeated the award in senior electronics at both the local and California State fairs.

He also ranked in the top 10 per cent of entrants in this year's Westinghouse Science Talent Search, and in 1961 was selected to attend a special National Science Foundation summer session at University of the Pacific.

Ted will attend University of California, Berkeley, this fall, majoring in physics.

James Warniak, 17, was graduated last month from Clairemont High School where he had been an honor student in mathematics and science. A life member of the California Scholarship Federation, he had maintained a straight A average the last three years.



James S. Warniak, winning GD/Convair son.

In addition to the GD Merit Scholarship, he won an Irvin J. Kahn Scholarship of $100 for exceptional ability in his field and a Bank of America Achievement Award in English.

James was a member of the team which won overall city and county honors in the GD/Astro Mathematics Contest.

He has been a member of the Junior Engineering Technical Society and is active in the St. Mary Magdalene Catholic Youth Group.

He will enter Massachusetts Institute of Technology this fall for a major in mathematics, heading toward a career in aerospace science.

Richard Brandt, 17, is a graduate of Arlington Heights High School where his major subjects were science and math. He graduated magna cum laude, scoring a grade point average of 3.986 of a possible 4.0.

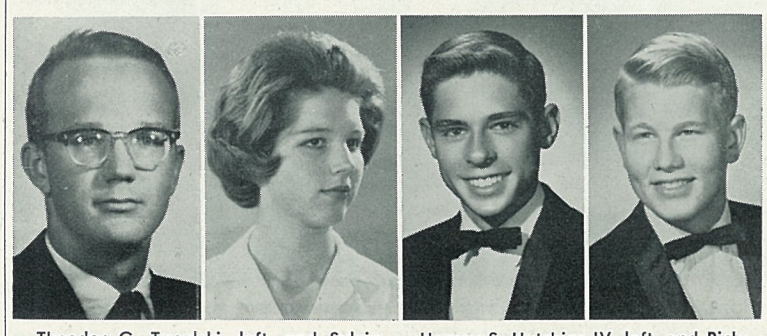
He was a member of Young Citizens Forum, Allied Youth, and National Honor Society, and was business manager of the school newspaper.

Richard plans to attend Michigan State University where he will major in mathematics.

Hervey Hutchins, 18, also graduated from Arlington Heights High School where he majored in general science. He graduated summa cum laude and was the highest ranking boy student in his class.

He was a member of the National Honor Society, Student Council J-Club, and held office in the High School Red Cross and Young Citizens Forum.

Hervey will major in physics at Rice University.



Theodor G. Tanalski, left, and Sylvia Kalitinsky, GD/Astronautics son and daughter.

Hervey S. Hutchins IV, left, and Richard S. Brandt, GD/Fort Worth sons.



DRUM BEATER — Jim Dick (Dept. 25) dons full band regalia to announce second annual Highland Fling sponsored by GD/Pomona Highlanders. Event will be held Sunday, July 21, at PRA recreation area.

GD/Pomona Develops New Way For Fusion Welding Rene' 41

A new method for fusion-welding Rene' 41 has been developed at General Dynamics/Pomona by operations planning and development (Dept. 21).

The method assures 100 per cent weld penetration and provides sufficiently rapid heat dissipation to eliminate the possibility of cracking.

Rene' 41, a precipitation hardening, nickel base alloy possessing high strength in the 1,600 to 1,800 degree Fahrenheit temperature range, is a particularly well regarded material for atmospheric re-entry use. New techniques for machining the material were developed earlier at GD/Pomona (**General Dynamics NEWS**, Feb. 20).

Rene' 41, however, does present critical welding problems because it is susceptible to strain age cracking during and after a weld or after subsequent heat treatment.

"The manual method developed at GD/Pomona provides for fusion welding of a designed, heavy wall tubular butt joint. It also includes positive means to align and rigidly hold the weld members prior to and during the weld," J. R. Ewell, manufacturing engineer (Dept. 21), said.

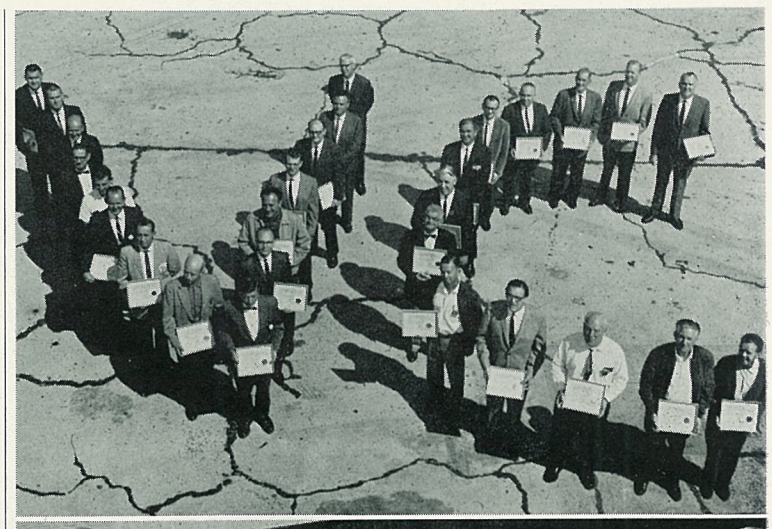
"This is done by means of a thin wall, internally press-fitted Rene' 41 back-up ring. The ring serves initially to positively align the abutting weld members, to support the molten puddle of the weld and to provide extra depth to fuse into — insuring the 100 per cent penetration requirement," Ewell added.

The introduction of a continuous, internal water spray into the sealed chamber—created by the tightly fitted ring—quenches the heat of the weld. The cooling water is directed to the parent metal of the weld members, thus rapidly dropping the metal temperature through the critical zone of heat.

The test program established that to achieve 100 per cent penetration in butt joints approached from one side only, the machined groove must be nearly as deep as the wall thickness. Without a back-up ring, the first weld pass must tie the remaining thin abutments, concurrent with the risk of "burn-through" due to the fluidity of the shallow, unsupported, molten puddle. This condition clearly indicated the advantage of using some form of positive metal back-up to the weld.

The welds produced using the back-up ring and internal water spray are of good structure, without porosity or cracks. Heat absorption is so rapid that little discoloration shows beyond the immediate weld zone. The welding is accomplished quickly and with minor set-up effort.

Assisting Ewell in the Rene' 41 welding development were D. W. Holmes, factory special assignment (Dept. 24), F. J. Kristof, process engineer (Dept. 27), and Angelo Costantino, general foreman (Dept. 53).





BRAIN PICKERS — GD/Convair men, who recently completed seminar No. 16 in an intensive analysis pointed to new proposal, form huge VC in upper shot. Lower photo shows committee which screened more than 500 ideas from brain storming sessions. Group coordinated and evaluated suggestions, summarized by F. H. McLaughlin, standing.

Highlanders Sponsoring Second Highland Fling

GD/Pomona Highlanders will sponsor their second annual Highland Fling at PRA recreation area on July 21 from 11 a.m. to 4:30 p.m.

Open to the public, the event will feature a program of pipe and drum music, Scottish Highland and country dancing, Scottish foods and athletic events, according to Commissioner Louis St. Martin.

"Invitations have been sent to Scots' organizations in Riverside, Santa Monica and Venice," St. Martin said. "Members of these groups have indicated they plan to attend and to enter the competition."

Highlanders participated in the 31st annual Highland Gathering and Scottish Games held at Corsair Field, Santa Monica on June 29.

A record crowd watched Helix High School (La Mesa) Pipe and Drum Band win the GD/PRA Highlanders Junior Pipe Band award for second year in row. Top honors in Highland dancing competition again went to Nancy Hays of Edmonton, Alberta, Canada, who won GD Highlanders Grand Aggregate Amateur award (for competitors under 16 years of age) and the City of Edinburgh Medal. Second highest award of day went to Barbara McCabe, daughter of GD/Convair employee, C. F. McCabe, who won the Chieftan's Trophy.

Two younger members of Highlanders also brought honor to the group for their performance in sword dance competition. Bobbie Bates won first place in Amateur Sword Dance (competing against almost 100 contestants) and Laura Bayer, daughter of Ralph Bayer (Dept. 7), took second place in Novice Sword Dance class. Miss Bates also placed in two of track events.

GD/Convair Value Control Units Look to Experience for Savings

Value control teams in GD/Convair's most recent seminar delved deep into the division's past experience in design and manufacturing to apply lessons learned over the years to basic value assurance of a new proposal.

As teams combed the files and picked the brains of specialists in every department, from design through to final production, they found that costs might be cut by as much as half.

New design concepts, new materials, and improved manufacturing methods applied to production of like components could well bring as much as 50 per cent cost prevention in production of new products.

As seminar No. 16 wound up its two-week study, teams recommended follow-on projects which should be analyzed in future seminars. Another seminar took up where No. 16 left off to carry on the intensive value assurance investigation.

One of the points brought out at conclusion of the review was the enthusiastic response of seminar members to the programed technique of value control training.

While value control teams were analyzing specific components within the seminar sessions, other groups from manufacturing, tooling, quality control, engineering were called into brain storming sessions, headed by F. H. McLaughlin.

Over 500 ideas were submitted. These, in turn, were screened by a steering committee for a cross-section which could be used for the benefit of the division in submitting competitive bids on a particular proposal.

Serving on the committee were: Ray Chesler of engineering; L. C. Stuckey, inspection; L. R. House, primary assembly; F. F. Stevens and Emmett Williams, field operations; O. L. Hunley, tooling; Harry Rote, metalbond fabrication and assembly, plastics, trim; Frank Blair, fabrication; O. W. Sweetland, tool manufacturing; E. H. Damarus, tool engineering; H. P. Williams, value control.



VALUE GRADS—Participants in recent GD/Astro value control seminar gather with department coordinators at conclusion of presentations of team project results to management representatives.

Article on Rene' 41 Earns $150 Award

J. R. Ewell, manufacturing methods engineer (Dept. 21), is the latest employee to qualify for a General Dynamics/Pomona writing award, C. D. Cornell, assistant to the president, said last week.

Ewell's article, "Fusion Welding Rene' 41," has been accepted for publication in American Machinist/Metalworking Manufacturing magazine.

The award program pays $150 for each article written by a GD/Pomona employee and accepted for publication by a trade, technical or professional journal.

Boy Scouts Honor Project Engineer

Al Shaffer, project staff engineer at GD/Pomona, recently received a plaque for his outstanding service as scoutmaster of Troop 121, Pomona.

Shaffer became interested in scouting when his older son, Bob, joined. He became a committee member of Troop 121 in January, 1962.

Significant Cost Reductions Reported by Value Seminars

Eight General Dynamics/Astronautics teams last month concluded a two week value engineering seminar, each with reports of significant potential cost reductions on their assigned projects.

The seminar was first of its kind to be held within the framework of GD/Astro's value control department under E. D. Heller.

Preliminary estimates indicate cost reductions from the seminar as a whole may average 61 per cent, with individual teams reporting savings from 38 to 96 per cent. (Cost reduction percentages are based on net savings.)

Final seminar session was held June 28 when team participants made presentations of their seminar findings to senior representatives of departments concerned with team projects, and others in areas related to the value engineering function.

Closing remarks came from W. W. Withee, vice president - engineering, who emphasized management's expectations from the value control program.

The entire program is formulated on the idea that value engineering can "pay its own way" and that systematic application of its principles can improve the value of GD/Astro products and services.



GRADUATES—Members of GD/Pomona's 26th Value Engineering Seminar are shown on final day, June 21. Value engineering disciplines and techniques were applied by six teams to missile hardware projects for purpose of removing unnecessary costs while maintaining or improving function, quality and reliability.

Thoeni Qualifies For Writer Award

H. B. Thoeni, materials and process engineer (Dept. 21), has qualified for the $150 General Dynamics/Pomona writing award, C. D. Cornell, assistant to the president, has announced.

An article written by Thoeni entitled "Photofabrication Aids R and D Effort" was published in June issue of Western Metalworking News magazine.

Lewis Appointed Close-out Chief For Material

The complex process of closing out subcontracts and negotiation of related contractual affairs will be expedited at General Dynamics/Astronautics by a new function recently established within the material department.

In the past, several areas within the department shared responsibility for tasks now centered under J. H. Lewis.

Organization of the new function resulted from a study directed by H. E. Moose, assistant to F. J. Traversi, vice president-administration, which indicated that centralization would streamline the operation with resulting benefits to GD/Astro, its customers and suppliers.

Lewis is a business administration graduate of Stanford University and joined GD/Astro in 1961. He formerly served as executive adviser to corporate contracts proposal section at North American Aviation, and earlier spent five years as deputy chief of foreign procurement with Air Force Air Materiel Command.

GD/Convair Reviews Service Regulations On Value Revisions

GD/Convair's value control function, under H. P. Williams, manager, was requested to review the proposed revisions of the Armed Service Procurement Regulation, due to go into effect within the near future.

Summary by GD/Convair was requested by the Association of Aerospace Industries which was represented on the joint Department of Defense-industry task force committee which met July 1 on the value engineering requirements to be included in the ASPR.

Also, reports Williams, a DOD handbook on value engineering has recently been released and is available to industry.

Data-Gathering Flights Completed

General Dynamics/Fort Worth data-gathering flights are now complete for supersonic B-58 Hustler bombers in their newest, most versatile, and most potent form—equipped with operational multiple weapon systems.

The data-gathering flights for the new configuration were completed June 28 when Pilot Fred Voorhies brought airplane No. 38 in for a landing at GD/Fort Worth.

In doing so, Voorhies also piloted the airplane to set an all-time GD/Fort Worth record for a single B-58 flying data-recording missions. It was the aircraft's 23rd flight of the month—a total unequaled previously by any B-58 in the entire history of the Hustler flight program since it began with the first B-58 flight Nov. 11, 1956.

"While our information-recording flights are now complete," said E. L. Schultz, "it will be some time yet before all the volumes of information can be reduced and published in handbooks that all Air Force multi-weapon B-58 pilots will use."

Schultz is assistant project engineer (Dept. 267) for B-58 flight test programs.

Airplane No. 38 flights, Schultz explained, were to obtain stability and control data needed for operations of multi-weapon B-58s under all different conditions anticipated. The end product—the handbook for flight crews—will enable them to plan each mission for maximum efficiency.

Flight operations in June also marked completion of two other B-58 data-gathering programs, and completion of all such flight operations necessary to meet current contractual requirements.

"And on schedule," Schultz emphasized.

Airplane No. 42 completed a series of flights to record data on flutter, air loads, dynamic response, and buffet fatigue on multiple weapon-equipped B-58s.

"These flights demonstrated—in simple terms—that B-58s carrying the multiple weapon system will perform as we predicted they would," Schultz explained. "Overall, the program was completely successful."

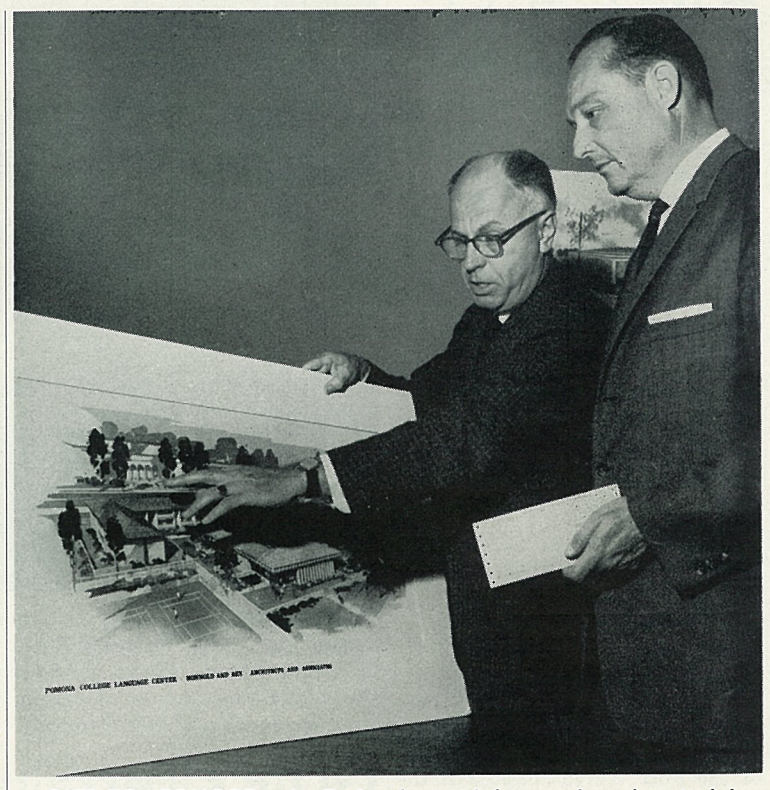
Third airplane to complete its data-gathering missions was No. 9. It was not used to test B-58s or their systems, but rather to serve merely as a flying laboratory to test for the Air Force various aircraft components and systems under all flight conditions. This is the program known as "Quick Check."

Flight department and engineering test department provided crews for the three aircraft used to complete the flights. Crews varied from time to time, but No. 38 was usually manned by Val Prahl, manager of flight, pilot; Jim Lucas, flight engineer; and Dale Ford and Max Runyan, alternates as flight test engineer.

Regular No. 42 crewmen were Voorhies, pilot; Grover Tate, flight engineer; and Ken Timpson, flight test engineer. Regulars on No. 9 were Earl Guthrie, pilot; Vince Kane, systems operator; and A. B. Riley, flight test engineer.

Schultz said that airplane maintenance during the last two months of the three-aircraft program was outstanding, and enabled flight crews to make a total of 53 flights in the period. Ground crews were headed by C. N. White, Dept. 93 superintendent.

Aircraft No. 38 and No. 42 are now being prepared for modernization prior to delivery to Strategical Air Command as tactical bombers. No. 9 will be converted to a trainer-type B-58.



GIFT TO COLLEGE—A. E. Lambert, right, engineering training representative at GD/Pomona, presents check to Richard T. Nimmons, vice president of Pomona College. Money will be added to fund for new language center on campus. Division also presented Corporate checks to Claremont Men's College and Harvey Mudd College in Claremont.

50 Consecutive On-Time Takeoffs Set New Record For B-58 Hustler

Air Force B-58 Hustler No. 5672 pulled up from the Carswell Air Force Base, Texas, runway June 12 to set a new Air Force B-58 record: 50 on-time takeoffs in a row.

And on June 28, its flight and ground crews were still adding to their unbroken string. They put the 43rd Bomb Wing takeoff champion into the air for the 59th consecutive time.

"Furthermore, we're determined to keep the record going as long as it is humanly possible, and so long as we can do so while complying strictly with all flying safety and other necessary Air Force requirements," said Lieut. Col. Norman J. Radin.

Colonel Radin is commander of the 43rd organizational maintenance squadron that maintains and services B-58s of the 43rd Bomb Wing.

The GD/Fort Worth-built bomber, specifically a TB-58 designed for checking and upgrading pilot skills, carried on after its record-breaking flight to accomplish another training mission.

Maj. John Kennen was in the first station as pilot-instructor. Maj. Ray Boll was the pilot, and Capt. Ronald Marcum was the defensive systems operator.

The flight crew gave all credit to the ground crew. Said Major Kennen: "It was the ground crew's show. And they've done a magnificent job of keeping the bird ready to go when the schedule calls for it."

Colonel Radin said the 50th on-time mission was a first for all B-58s.

Colonel Radin's praises for the ground crew came in the form of a specific reward: steak dinners for all.

An on-time takeoff, by definition, is one that is accomplished within five minutes of the time and date scheduled. The 50th takeoff was for a flight scheduled several weeks in advance as part of a many-mission flight training program.

B-58 Bomb Wing at Carswell AFB Earns AF Outstanding Unit Award

The B-58-equipped 43rd Bombardment Wing at Carswell Air Force Base is now the holder of the coveted Air Force outstanding unit award.

And everyone assigned to the wing during the historic two-year period recognized—Aug. 1, 1960, to Aug. 1, 1962—is authorized to wear on his uniform the outstanding unit ribbon.

The 43rd Bomb Wing, one of two Strategic Air Command tactical units flying the General Dynamics-built B-58 Hustler supersonic bomber, established during the period a total of 12 new world records, an average of one every two months.

The period began with the date Strategic Air Command took over executive responsibility for Air Force operations of B-58s. Men of the 43rd then began their assault on world records, climaxing the period by copping the MacKay trophy for the second consecutive time, a heretofore unprecedented accomplishment.

Its record-shattering assault already had won for the 43rd and the B-58 the Thompson Trophy, Bleriot Trophy, Bendix Trophy, and Harmon Trophy.

The official records set by the 43rd, commanded by Col. Everett W. Holstrom, included six speed runs in January, 1961; another speed run in May, 1961, in which the B-58 averaged more than 1,302 miles an hour; a dash later that month in which a B-58 flew New York-to-Paris in three hours and 20 minutes; and a Los Angeles-New York sprint in March, 1962, in two hours and one minute.

(Not included in considering the 43rd for the outstanding unit award was another B-58 flight that set two more world records—for altitude and payload—since this B-58 was flown by an Air Force Systems Command Crew.)

Achievements of the 43rd during the period also included these milestones: captured first crew honors flying B-58s in radar bomb scoring in the 1960 SAC annual combat competition; and conducted training programs for B-58 combat crews.

The Fort Worth Star-Telegram commented on its editorial page June 27:

"It seemed there would be no end to it (that is, the setting of records) . . . maybe there wouldn't have been an end if there had been anything left to win.

"The 43rd's feats were accomplished in a plane built at the General Dynamics plant here. Fort Worth has every right to be proud of the Hustler.

"But the new honor bestowed on the 43rd is a reminder that it was skilled, courageous, and dedicated men who made the Hustler go. It is to all these men that the city now takes off its hat."

U.S. Naval Weapons Station Given Quarterdeck Markers

U.S. Naval Weapons Station, Yorktown, Va., first depot to handle GD/Pomona-built missiles, was presented ceremonial quarterdeck markers, models of the Advanced Terrier and Tartar missiles, in a recent ceremony.

The stanchions were presented to Capt. F. N. Scanland, USN, commanding officer of the Naval Weapons Station, by C. L. McCabe, GD/Pomona's director of fleet systems support.

Yorktown depot is located on the York river, a few miles southeast of Williamsburg and 35 miles northwest of Norfolk. Formerly U.S. Naval Mine Depot, the station was established just prior to end of World War I by President Woodrow Wilson.

In November, 1952, Guided Missile Service Unit No. 211 was officially activated by the Bureau of Ordnance and later became Fleet Missile Department.

First familiarization missile was delivered to Yorktown on Dec. 31, 1952, and many of the techniques used in newer depots were initially developed at the station.

Cdr. R. W. Phipps, USN, is executive officer of the Naval Weapons Station and Cdr. G. E. Kaufman, USN, is head of the Fleet Missile Department.

GD/Pomona was also represented at the presentation by F. P. Price, field service section head; G. E. Dawson, fleet systems support staff engineer; K. S. Brooks and W. N. Viani, field service representatives.



CEREMONIAL—C. L. McCabe, GD/Pomona director of fleet systems support, presents set of Advanced Terrier stanchions to Capt. F. N. Scanland, USN, commanding officer of Naval Weapons Station, Yorktown, Va. Depot was first to handle GD/Pomona-built missiles.—(U.S. Navy photo.)



JOB DONE—GD/Convair mechanics stand beside first launcher assembled at White Sands Missile Range for Little Joe II launch vehicle. In front row (from left) are J. D. Sanders, Dept. 48 inspection; E. R. Compton, D. D. Guest, D. D. Claxton, H. F. Whisman, A. E. Bittner, all Dept. 131. In back are O. Ray, L. K. Thornbrugh, W. C. Willenborg, also Dept. 131 experimental.

GD Men Are Elected To NMA Council Posts

Two posts on the new board for San Diego Area Council of National Management Association Clubs will be filled by General Dynamics men for the 1963-64 term.

R. G. Macomber of GD/Convair accounting was elected treasurer and W. E. Magnuson of GD/Astro reliability support publications, secretary, at the June 26 election of officers.

They will be installed along with A. E. Froehlich, Ryan Management Club, newly-elected president, and A. R. Purdy of Advanced Structures, vice president, on Aug. 3.

L. G. Lawson of GD/Convair remains on the board as past president.

GD/Fort Worth Men Head Tech Writers

Fred Bachmann of GD/Fort Worth service engineering has been elected executive chairman of the Fort Worth chapter of the Society of Technical Writers and Publishers.

Other GD/FW employees elected were Carl King, executive vice chairman; J. R. Westbrook, first vice chairman; E. V. Bartley, recording secretary; C. J. Gilliam, corresponding secretary, and Doyle Weatherly, treasurer.

New directors are W. O. Denman and R. V. Hendricks.



ON TRIAL — Lt. Doug McCrimmon, project test pilot, Weapon System Test, NAS, Patuxent River, Md., and R. F. Schillinger, terrain following radar project manager at GD/Electronics - San Diego, check over installation of system on A4C jet plane before start of Navy evaluation of GD/E radar.

GD/E's Terrain Radar Tested by Navy Pilot

Military tests of the terrain following radar developed by General Dynamics/Electronics-San Diego were completed, as scheduled, late last month at the Naval Air Test Center, Patuxent River, Md.

Termination of the first military trials of the GD/Electronics system came June 20 as the test plane, a Navy A4C light attack jet aircraft, went into a three-week check.

During the 46-day period, from May 6 to concluding date, 39 evaluation flights were made during 24 flight days in a wide range of conditions — at clearance heights down to 200 feet, different speeds, all kinds of weather, and over a great variety of terrain.

Most of the flights, with Lt. Doug McCrimmon, Navy Weapon System Test project test pilot at the controls, were made over the approved low-level test route across demanding rugged regions of the Appalachian Mountain chain.

According to R. F. Schillinger, TFR project manager at GD/Electronics, test results are expected to be favorable. "We have every reason to anticipate that evaluation reports will be satisfactory. And, our project team certainly is gratified and impressed by the Navy's interest shown by the acceleration of the program when it was stepped up to three flights a day during the final week.

"The Patuxent trials aroused interest in other areas. Representatives from the British Royal Navy, U.S. Army, and Cornell Aeronautical Laboratory visited the site during the tests, especially to get information on the system. The Air Force, also, has expressed interest in progress and results of the program."

R. B. Williams, GD/E engineering representative, was assigned to the Naval Air Test Center during the trials. Schillinger, together with other GD/ Electronics men—General Manager John L. Lombardo; J. L. Brooks, manager of engineering; R. L. Olson, systems engineer—visited the Maryland base on different occasions to monitor progress.

According to present planning, the Navy jet craft will return to San Diego around the middle of this month for removal of the equipment. A final Navy evaluation may be made en route with a demonstration of the GD/E system at NOTS, China Lake, Calif.

Airline Honors 'Scotty' Doig

John "Scotty" Doig, GD/Convair chief of service parts, is proud possessor of the first award ever given by American Airlines in recognition of service "beyond the call of duty."

The plaque, bearing American's insigne, has place of honor on Doig's office wall. It is especially meaningful to Doig because it was one of the emblems from an American Airlines' Convair 240, built during the era Doig directed 240 manufacture as factory superintendent.

A letter from the airline's general purchasing agent, Myrl L. Chapman, which accompanied the award, said: "Over the years since you have assumed the responsibility of spare parts support for the Convair 240 and 990, you have taken a great deal of personal interest in the American Airlines' account, especially when we have had statewaits (planes down due to lack of parts); therefore, this plaque is awarded to you in recognition of 'beyond the call of duty' type service rendered.

"You might be interested in the fact that we have never had occasion to make a similar presentation to anyone else. Please do not rest on your past laurels—we may reclaim this plaque at any time!"



HONORED—John Doig, chief of GD/Convair service parts, shows secretary, Norrine Hoberg, plaque given him by American Airlines for service "beyond call of duty."

Wohl Transfers To New York

Robert A. Wohl, former SLV manager of program control and administration for GD/Astronautics, has been appointed assistant to the General Dynamics vice president contracts and pricing, C. L. Meador, at Corporate headquarters in New York City.



R. A. Wohl

Wohl, who received his early schooling in Milwaukee, Wis., attended the University of Wisconsin and was graduated from San Diego State College in 1952, after which he served two years as an Air Force officer. He joined GD/Astro in 1956 as a contract analyst and had served in the post of manager of contracts at Astro.

He was admitted to the California bar in 1960 following receipt of his law degree from University of San Diego. He attended the University of California law school from 1954-56.

Teague Named To Corp. Post

B. D. Teague has been appointed administrator of wage and salary programs for General Dynamics Corporation, Algie A. Hendrix, vice president - industrial relations, has announced.



B. D. Teague

Formerly manager of employee relations at the company's Stromberg - Carlson Division in Rochester, N. Y., Teague has been with General Dynamics for 13 years. He began his career with the Fort Worth Division in 1950, specializing in industrial relations work.

From early in 1961 to July, 1962, he was assigned to GD/Astronautics to assist in the program to activate 13 Atlas missile bases which that division constructed in 11 states.

A native of Texas, Teague received a B.B.A. degree in industrial relations from North Texas State University in 1949.



R & D REPORT—General Dynamics men heading up manufacturing research and development activities at various divisions meet in San Diego to pool project progress. T. E. Piper of GD/Pomona (standing) explains new project study to (from left) W. C. Graham, General Atomic; R. E. Stewart, Electric Boat; V. G. Mellquist, GD/Astronautics; R. K. May, GD/Fort Worth; E. W. Feddersen, Corporate director of manufacturing engrg.; M. D. Weisinger, GD/Convair.

Research in Dynamics Divisions Discussed in Coast Conference

Current and prospective programs in fields of advanced research under way at six General Dynamics divisions were discussed fully at a meeting of manufacturing research and development managers called together at San Diego by E. W. Feddersen, Corporate director of manufacturing engineering.

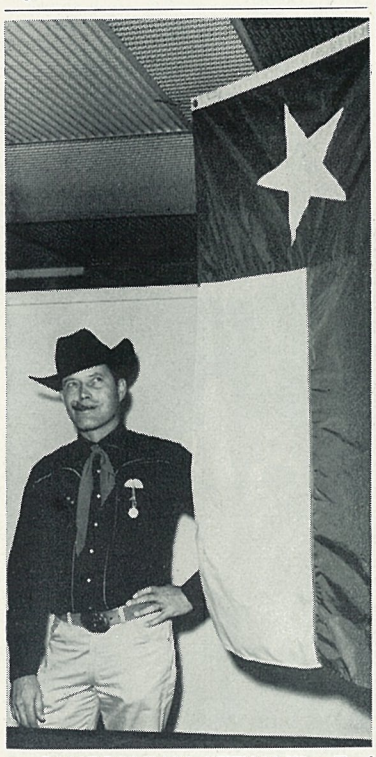
The two-day session, June 24-25, was one of similar gatherings held periodically to review scope and status of manufacturing development and research within General Dynamics divisions.

Reporting on independent research work, sponsored by the Corporation, at their respective divisions were M. D. Weisinger of GD/Convair; R. K. May, GD/Fort Worth; V. G. Mellquist, GD/Astronautics; T. E. Piper of GD/Pomona; R. E. Stewart of Electric Boat; and W. C. Graham of General Atomic.

W. R. Crain, representing the Corporate government accounting function, outlined conditions and definitions of the Armed Services Procurement Regulation as they concern funding and justification for independent research and development and the sharing and ceiling conditions set for industry.

General discussion centered around potential programs initiated by NASA and Aeronautical Systems Division of the Air Force which may become available, with an eye to ways and means of improving the chances of General Dynamics' share through sales efforts.

A tour of General Atomic's manufacturing facilities rounded out the agenda.



CALIFORNIAN "TEXAN"—Ted Draper of GD/Convair engineering took to Lone Star state and customs like a native, even to complete Western outfit, while on special assignment. Attire was so authentic Draper's wife didn't recognize him as he got off plane at San Diego.

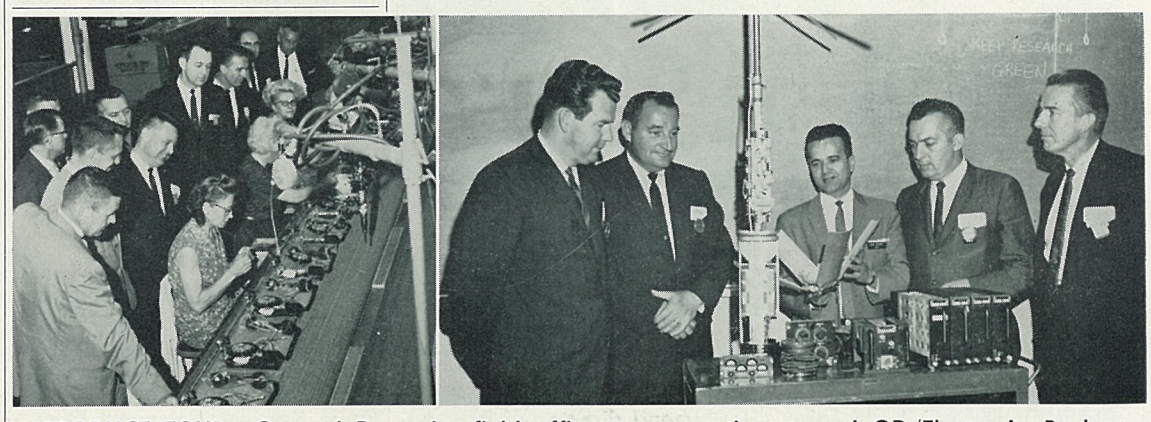
Field Reps Briefed at Rochester On Phone-Making, ASW Devices

General Dynamics field office representatives, from coast to coast, observed how telephones are made at Stromberg-Carlson and saw the intricacies of a wide range of anti-submarine warfare equipment at GD/Electronics — Rochester during a series of briefings at the New York-based facilities last month.

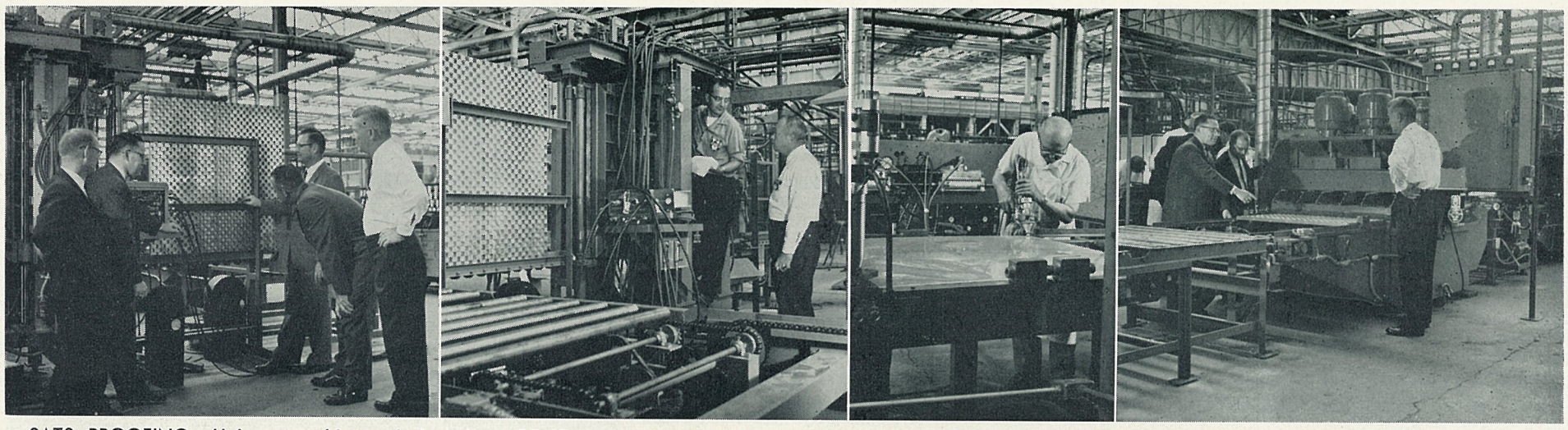
The program familiarized delegates from various sections of the country with communication products produced by the two GD divisions. The briefing was designed to strengthen field office marketing potential in behalf of General Dynamics divisions.

G. V. Bureau of Corporate Office coordinated the three-day meetings held during two successive weeks. Host at Stromberg-Carlson was T. C. Thompson, vice president—sales; and at GD/Electronics, Sidney R. Curtis, vice president—plans and programs.

Of particular interest to the group were such products as Stromberg-Carlson's electronic telephone switching equipment and multiplex systems, and GD/Electronics' single sideband communication equipment and anti-submarine warfare gear.



PRODUCT TOUR—General Dynamics field office representatives toured GD/Electronics-Rochester and Stromberg-Carlson recently. At left they see how telephones are made at S-C, while at right John R. Hughes of GD/E (center) explains ASW equipment to R. W. Menzel, Washington Office; R. M. MacIver, Colorado Springs; Paul Brandt, Red Bank, N.J.; Elliott Spurway, Washington.



SATS PROOFING—Unique machines, designed at GD/Convair especially for automated SATS mats line, go through proof checks early this month as "mat-a-minute" line is readied for actual production. At far left, S. E. Smith, tooling specialist; W. G. Martin, SATS tool engineer; O. W. Sweetland, tool manufacturing superintendent; E. H. Damarus, chief tool engineer; H. W. Meyers, tool fabrication foreman, examine SATS core as it passes through GD/Convair-designed welding machine. In next photo Fred Walrod, Dept. 401-5 leadman, and Bill Ganoe, tool design engineer, are shown at welding machine. In third photo Al Kirsch of Dept. 401-5 tests potting tool for shooting epoxy into mat to form solid connection between edges and casting. In last shot, Martin, Smith, Meyers watch proofing of new-type milling machines. Twin machines stand in tandem on automated line. They are in addition to those used in original SATS wood core concept.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 14 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, July 10, 1963



BOND GIVE-AWAY—In photo at left, Pat Davila of GD/Convair Dept. 69 hands sign-up card to J. K. Field, manager of personnel services, in drawing for five $25 U.S. Savings Bonds at close of bond drive. At right, John L. Lombardo, GD/Electronics general manager, congratulates Marion Arends of inspection on her lucky card which won her one of GD/E's prize bonds.

General Salary, Wage Increases Set for Supervisors, Non-Reps

Five divisions of General Dynamics Corporation last week announced general salary and wage increases for supervisors and non-represented salaried and hourly employees.

The pay increases, effective July 1, have been given to about 11,500 employees not represented by unions at General Dynamics/Astronautics, GD/Convair, GD/Pomona, and GD/Electronics-San Diego. GD/Fort Worth employees in the same categories also received the salary and wage increases.

All supervisors and non-represented salaried employees at those divisions have been given a general salary increase of three per cent (3%) in their base rates of pay.

The same group of employees also has received an improved vacation benefit. Those with ten or more years of continuous service and who were on the active payroll as of July 1 shall be entitled to three weeks of vacation with pay.

In addition, the five General Dynamics divisions have improved the overtime provisions, effective July 1, for supervisors and non-represented salaried employees.

The general salary and wage increases for supervisors and non-represented salaried and hourly employees are not based on any so-called pattern established by any union contract. There have not been negotiations with a union which would establish such an increase pattern. Increases were put into effect in order to carry out company policy and to maintain a competitive position in the industry.

Also effective July 1, all non-represented hourly employees at the five General Dynamics divisions have received a general wage increase of 2.5% in their base rates of pay.

The annual cost of the salary and wage increases and vacation benefits for the four General Dynamics divisions in California is estimated at $3,350,000.

The pay increase and other improved benefits for salaried employees and the hourly wage increase have been put into effect in order to continue to maintain a competitive position in the industry, a company spokesman said. The present aerospace programs and the promising future business at the divisions mean they must retain as well as attract competent, high-calibre personnel, and the increases and benefits are a continuance of company policies of providing equitable treatment to its non-represented employees, he said.

Additional increased benefits also have been given to salaried employees at the General Dynamics/Electronics-San Diego division which the company is now in a position to provide since the salaried employees disassociated themselves from the Engineers and Architects Association in a recent election. The benefits have been in effect for all employees at the other divisions, except those represented by the EAA. and are now being extended to GD/E salaried employees. These benefits include, under group insurance, a company contribution of $1 per week toward premium payment for employees with dependent coverage; hospital room and board allowance increase

(Continued on Page 4)

Bond Buying Boosted Near Drive Target

Bond buyers at General Dynamics divisions of Astronautics, Convair, Electronics, and Pomona joined in whole-heartedly to boost participation near the 70 per cent goal as incomplete tallies were taken last week.

GD/Astronautics and GD/Convair both went over the mark. GD/Astro had pushed its percentage to 73 per cent. GD/Convair's participation stood at 70.9 per cent at last reading and could well go higher by the time final count is made of people on vacations and sick leaves.

GD/Electronics nearly doubled its participation, raising the number of bond buyers through payroll deduction to 60 per cent.

Percentage of bond buyers at GD/Pomona increased to 65 per cent of employment during the June 17-30 campaign. During the drive, 1,650 new buyers were signed and 318 employees increased purchase amounts.

Lucky winners of the free U.S. Savings Bonds given away in drawings at GD/Convair were:

New sign-ups—E. H. Horstman and F. A. Yarick, both Dept. 171-0.

Increased deductions—Terry J. Viele, Dept. 6-2; J. G. Card, Dept. 3-1.

Unchanged purchases — O. S. Wright, Dept. 171-0.

* * *

GD/Electronics winners were:

New sign-ups—W. E. Schmidt, Dept. 65-10; D. L. Zimmerman, Dept. 14-20.

Increased deductions — Marion Arends, Dept. 33-00; H. D. Simpson, Dept. 71-00.

Unchanged purchases — R. C. Singer, Dept. 34-00.

SATS Production Line Checked

Pre-production proofing of machines designed and built by General Dynamics/Convair especially for turning out aluminum core landing mats on the fully-automated SATS assembly line began late last month.

The "translator" line set up in Bldg. 2 at GD/Convair Plant 1 is scheduled to swing into action at a mat-a-minute rate later this month. Mats will be produced at GD/Convair for one test airfield to be used by Marine jet fighter craft under a contract from Naval Air Materiel Center, Philadelphia, Pa.

Major tooling components added to the line, which were designed and built by GD/Convair tooling department specifically for the aluminum core mats, include the core welding machine, core milling machines, and an epoxy potting station—a novel tool for filling all voids around the inside edges of the completed panel.

These machines are in addition to the original milling machines and welding machines designed at GD/Convair for the original SATS wood core concept.

W. G. Martin, SATS tool engineer, explains, "The tooling approach for the SATS line differed considerably from the normal aircraft type tooling approach in that the program requirements of rapid production and continuous application made reliability, minimum maintenance, and specialization mandatory.

"These tools also were designed with the operator in mind. We have made extensive use of electronics, hydraulics, and pneumatics to perform the motions and functions, leaving the operator the task of monitoring a control panel. After initial proofing and adjustments, we believe these operations will be described as effortless and 'smooth.'"

A specific example of "smooth" is the operation of the special mills for machining 4-foot-long mat edge members and locking bars. An eight-sided drum rotates eight holding fixtures past an arbor of milling cutters and then deburring brushes, and produces finished milling parts at a rate of four per minute. The operator simply snaps the extruded aluminum stock into the fixtures as they pass by.

Two welding machines attach skin panels top and bottom auto-

(Continued on Page 2)

Clubmen to Watch Padres Play Denver

Tonight is "Ball Night" for Management Club baseball fans at GD/Convair and GD/Electronics.

Members, families, and guests will occupy a special section of reserved seats at tonight's (July 10) game with Padres playing Denver at Westgate Park.

Tickets are reduced to $1.25 each for the special summer outing.

Over $500,000 Cut in Costs Scored in 1963

Over half of the million-dollar goal in cutting operating expenses at General Dynamics/Convair, set for 1963, has been reached in the first six months of the drive.

By the end of June savings had reached $580,000, reported Resources Economics, control center which monitors the division's cost-cutting projects.

GD/Convair President J. H. Famme expressed his satisfaction in the cooperation of all departments in reduction of utility costs by restricting use of telephones, electricity, water, steam, air, and similar services and equipment. Careful utility use was responsible for a major share of the savings.

"This wholehearted participation in GD/Convair's Resources Economics effort to reduce expenses is a source of real encouragement to me," he said.

"We are achieving a fine record in reducing utilities costs. Yet, further economies are possible to bring utility costs even lower. I urge all of you to increase your personal vigilance to see that valves and switches are turned off when not needed, and that leaky air hoses, pipe joints, valves and faucets are reported and repaired promptly.

"I am sure that this reminder of the importance of all our conservation efforts will prompt you to continue the careful monitoring of our areas, and to be alert in saving overhead dollars wherever possible."

GD/Convair supervisors are urged to contact Resources Economics at ext. 1640, Plant 1, for assistance on any of their utility problems, or whenever they have suggestions which would result in further savings.

SATS Production Line Prepared For Action

(Continued from Page 1)

matically by push button control. In these welding machines a shuttle arm reaches out and pulls a part-loaded pallet into the machine where water-cooled platens sandwich the parts while four automatic welding heads weld the edges of the skin panel to the four extruded edge members, making a pan or completed panel. The finished article is automatically ejected back on the line. The whole cycle takes less than a minute.

The two new tooling operations—the core welding machine and core milling machines—added to the line to support the cast aluminum core design concept were developed with the same principles in mind.

The welder, much like the pan welder, reaches out and pulls two cast core segments into a water-cooled pressure platen. Here two automatic welding heads, one top and one bottom, traverse the length of the castings, making them one unit. After automatic ejection, the casting is fed into unique twin mills. The first mill finish-machines one side of the casting to a critical surface finish and dimensional tolerances and the second mill does the other side to an overall part thickness of 1.105, plus or minus ten-thousandths. Parts are "flipped" between mills by a turnover device. This allowed economical use of duplicate design and fabrication of milling machine components.

"I am confident that the tooling in our automated line is equal in quality and performance to any I've seen in the years I have been associated with companies specializing in automation. And, they were produced without extravagance or waste, and well within the budget and schedule," concluded Martin.

E. H. Damarus, chief tool engineer, lauded tooling for its months of efforts, "I believe the SATS tooling components demonstrate the GD/Convair tooling department's flexibility and capability. Our tooling design group under S. E. Smith and tool manufacturing group under H. W. Meyers have performed an excellent job."

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period July 1 through July 15.

Twenty-five-year: Dept. 42-5, P. R. Willoughby Jr.

Twenty-year: Dept. 16-1, J. J. Camporini; Dept. 93-6, G. M. Tipton; Dept. 97-2, A. L. Baber; Dept. 129, Edna Z. Fodor; Dept. 171, Fern W. Nuttall.

Fifteen-year: Dept. 6-2, Elario Hernandez; Dept. 14-4, Opal S. Loeffler; Dept. 25-0, Amy S. Dupont; Dept. 42-1, T. B. Weitbrecht; Dept. 48-11, Edward Jones; Dept. 93-6, Victor Klemaseske, N. O. Kraus; Dept. 129, Myrtle D. Thomas.

Ten-year: Dept. 6, T. J. Fleck, L. R. McClain, J. D. Rittweger, J. G. Valentino, R. K. Walter; Dept. 16-4, J. M. Neal; Dept. 23-1, C. R. Maikish; Dept. 25, Odell Houston, H. E. Scoggin; Dept. 28, F. W. McCoy; Dept. 42-5, Phyllis S. Sawtell; Dept. 93-0, Josephine Albano; Dept. 115, C. J. Popp, E. D. Robertson; Dept. 401-4, J. F. Young.

GD/ELECTRONICS

Fifteen-year: Dept. 72-00, L. J. Nicoli.

Ten-year: Dept. 14-30, N. E. Frawley; Dept. 34-00, C. J. La Brie; Dept. 58-00, W. P. Cass; Dept. 70-00, A. J. Catalano; Dept. 73-20, C. A. Ganger.

Retirements

CONVAIR

APPLEGATE—George W., Dept. 401. Seniority date Aug. 31, 1953, retirement effective May 15, 1963.

BERNARD—Keith F., Dept. 48-11. Seniority date Dec. 21, 1951, retirement effective June 28, 1963.

BRACKELSBERG — Mathias C., Dept. 223. Seniority date July 24, 1940, retirement effective June 28, 1963.

BRANCH—William R., Dept. 42-1. Seniority date Oct. 23, 1939, retirement effective June 28, 1963.

GRAHAM—George H., Dept. 138. Seniority date Nov. 18, 1953, retirement effective May 16, 1963.

HUMPHREYS—Monte L., Dept. 400-5. Seniority date March 28, 1952, retirement effective June 7, 1963.

JAMES—Howard, Dept. 14-6. Seniority date April 23, 1952, retirement effective June 28, 1963.

KELLY—Jessie M., Dept. 97-4. Seniority date Jan. 20, 1941, retirement effective June 28, 1963.

LERMER—August S., Dept. 6-300. Seniority date July 2, 1956, retirement effective June 28, 1963.

PATTERSON—Howard B., Dept. 115. Seniority date Sept. 12, 1956, retirement effective June 17, 1963.

ROSATI—Frank, Dept. 215. Seniority date July 7, 1953, retirement effective May 21, 1963.

THOMSON—Kenneth L., Dept. 218. Seniority date June 13, 1950, retirement effective May 13, 1963.

VOSS—Otto C., Dept. 101. Seniority date Oct. 27, 1933, retirement effective June 21, 1963.

WATSON—Helen D., Dept. 401. Seniority date April 27, 1951, retirement effective May 17, 1963.

WEINTRAUB—Jacob, Dept. 48-11. Seniority date Jan. 19, 1956, retirement effective June 1, 1963.

WILSON—Daniel B., Dept. 14-4. Seniority date July 4, 1949, retirement effective Feb. 8, 1963.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending June 21 and June 28.

Dept. 101, L. S. Meland, $10; W. L. Dueber, $10.

Dept. 119, J. Juanico Jr., $14.50.

Dept. 128, H. T. Cabral, two awards, $10 each; R. V. Lucero, E. P. Newman, two joint awards, $5 each on both.

Dept. 131, H. J. Komos, $11.20.

Dept. 141, J. Caldwell, F. A. Gordon, joint award, $5 each; J. S. Butina, $15.30.

Dept. 171, R. M. East, $10.

Cost Improvement Proposals for period ending June 21.

Dept. 42, H. C. Leppart.

Dept. 131, W. M. Clapp.

Speedy Printer Sold by GD/E

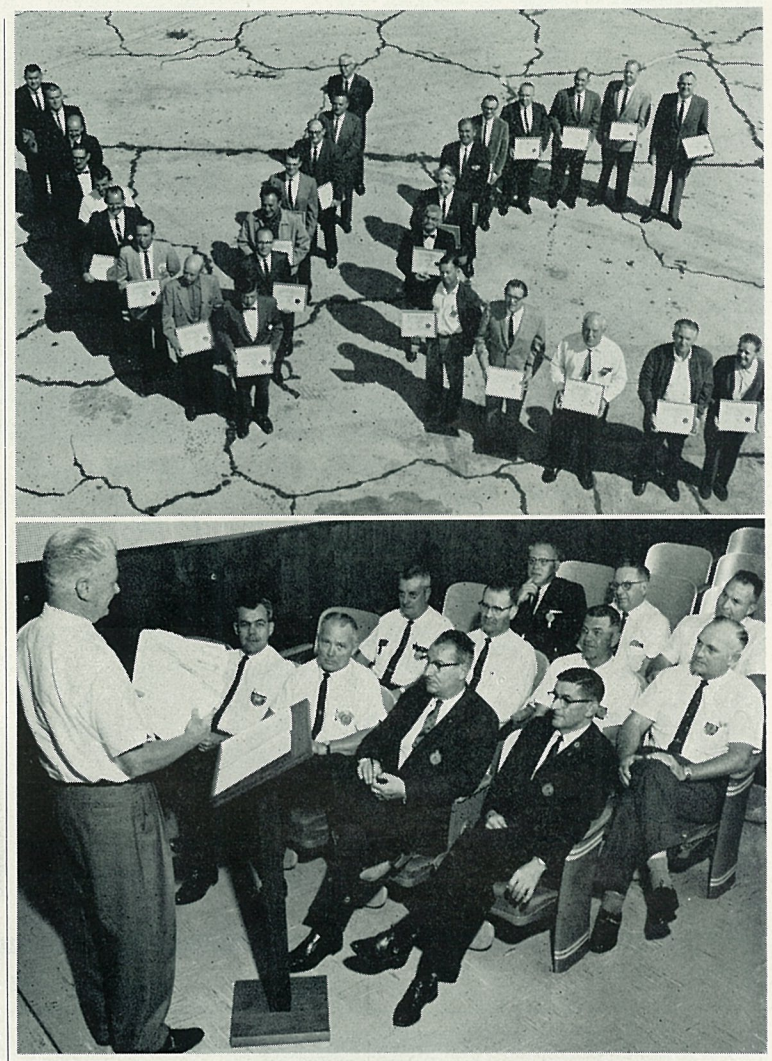
General Dynamics/Electronics-San Diego has sold a high speed electronic printer subsystem for use with one of the world's largest computers, it was announced last week.

The equipment was purchased by The MITRE Corp., Bedford, Mass., a nonprofit system engineering organization, for its work in support of the Air Force Electronic Systems Division (ESD).

At ESD's Systems Design Laboratory, which is operated by MITRE, seven S-C 3070 High-Speed Electronic Printers initially will be supplied by GD/Electronics to be used in connection with the IBM 7030 computer now used to simulate operation of major military command and control systems during the conceptual planning and design stages.

The GD/Electronics equipment will print text and plot graphic information compiled by the computer for use at positions in experimental command posts. Each S-C 3070 is capable of printing in excess of 3,000 words per minute.

In addition to the seven printers, General Dynamics is providing the control group electronics. This equipment functions as a complex switching network between the printers and the computer. The control group electronics, which can feed information simultaneously to as many as 16 printers, will check itself and the printers continually for malfunctions, and allows each of four computer channels to simultaneously operate any one or combinations of the printers.



BRAIN PICKERS — GD/Convair men, who recently completed seminar No. 16 in an intensive analysis pointed to new proposal, form huge VC in upper shot. Lower photo shows committee which screened more than 500 ideas from brain storming sessions. Group coordinated and evaluated suggestions, summarized by F. H. McLaughlin, standing.

SUPV., NON-REPS GET SALARY INCREASES

(Continued from Page 1)

from $15 to $20 per day for employees and dependents, with the company paying the cost of increase for both; and extension of dependent insurance coverage to cover unmarried children to their 23rd birthday who are full-time students and dependent upon the employee for support.

Also at GD/E, the company will provide personal liability insurance coverage of $50,000 per person or $300,000 maximum per accident for employees directed to use their cars and carry other employee passengers while working. The coverage will apply after the employee's personal liability insurance has been used.

GD/Convair Reviews Service Regulations On Value Revisions

GD/Convair's value control function, under H. P. Williams, manager, was requested to review the proposed revisions of the Armed Service Procurement Regulation, due to go into effect within the near future.

Summary by GD/Convair was requested by the Association of Aerospace Industries which was represented on the joint Department of Defense-industry task force committee which met July 1 on the value engineering requirements to be included in the ASPR.

Also, reports Williams, a DOD handbook on value engineering has recently been released and is available to industry.

GD/Convair Value Control Units Look to Experience for Savings

Value control teams in GD/Convair's most recent seminar delved deep into the division's past experience in design and manufacturing to apply lessons learned over the years to basic value assurance of a new proposal.

As teams combed the files and picked the brains of specialists in every department, from design through to final production, they found that costs might be cut by as much as half.

New design concepts, new materials, and improved manufacturing methods applied to production of like components could well bring as much as 50 per cent cost prevention in production of new products.

As seminar No. 16 wound up its two-week study, teams recommended follow-on projects which should be analyzed in future seminars. Another seminar took up where No. 16 left off to carry on the intensive value assurance investigation.

One of the points brought out at conclusion of the review was the enthusiastic response of seminar members to the programed technique of value control training.

While value control teams were analyzing specific components within the seminar sessions, other groups from manufacturing, tooling, quality control, engineering were called into brain storming sessions, headed by F. H. McLaughlin.

Over 500 ideas were submitted. These, in turn, were screened by a steering committee for a cross-section which could be used for the benefit of the division in submitting competitive bids on a particular proposal.

Serving on the committee were: Ray Chesler of engineering; L. C. Stuckey, inspection; L. R. House, primary assembly; F. F. Stevens and Emmett Williams, field operations; O. L. Hunley, tooling; Harry Rote, metalbond fabrication and assembly, plastics, trim; Frank Blair, fabrication; O. W. Sweetland, tool manufacturing; E. H. Damarus, tool engineering; H. P. Williams, value control.

Seminar teams, departments, and project leaders were:

Team No. 1—R. P. Poston (6), C. V. Beeson (101), H. B. Bender (123), C. R. Stith (34), R. R. Reschan (6). Project leader, W. E. Gleason.

Team No. 2—L. Imbimbo (171), N. D. Jones (15), G. L. Picotte (6), L. D. White (6), H. B. Wilson (115). Project leader, Gleason.

Team No. 3—G. Marshall (6), C. McCullough (171), R. D. Qua (15), E. Wallin (171), N. Saslove (6). Project leader, W. D. Lavis.

Team No. 4—J. R. Crothers (400), G. G. Grantham (133), J. A. Holland (16), S. L. Nichols (6). Project leader, C. L. Hibert.

Team No. 5—W. W. Fenton (6), W. M. Clapp (131), W. P. Moore (140), C. Small (15), A. L. Willson (6). Project leader, Hibert.

AF's Air Development Center Buys GD/E Electronic Console

An electronic display console produced by General Dynamics/Electronics—San Diego has been purchased by the Air Force's Rome Air Development Center, N.Y.

The Center, located at Griffiss AFB, is creating a special laboratory for testing and evaluating different methods for displaying information for command and control purposes. Knowledge from the studies will be provided other Air Force units considering purchase of such equipment.

Director of engineering at the Center is William P. Bethke. The man in charge of the display laboratory is Lee Harris.

The console provided by GD/Electronics is an S-C 1090 Direct View Display. The S-C 1090 translates computer output into words, number, graphics, and symbols at rates up to 30,000 characters per second and displays the data onto the face of a 19-inch CHARACTRONR Shaped Beam Tube.

In operation it can be used by the military as the vital man-machine link by presenting information from such sources as radar installations to a human operator.

The console provided the Air Force features a special tube with a small picture window in the rear. A projector placed at the window can project slides containing static information such as maps through the tube to the face. Thus, valuable computer time is not required for repeating information which rarely changes.

Another possible application for the special window in the tube is for a recording camera. By taking pictures from the inside surface of the tube, the camera records the information, yet leaves the front of the display free for continuous observation by the operator.

BECHTOL, CERNUTO GET NEW TITLES

R. E. Bechtol has been appointed manager of business planning and V. F. Cernuto, manager of program planning and control, at General Dynamics/Convair, effective June 30, announced J. H. Famme, division president.

Bechtol reports to D. H. Digges, director of contracts, while Cernuto reports to W. R. Bruce, director of operations.

As manager of business planning, Bechtol will be responsible for developing new business proposal plans and for the coordination of all proposal activities including the establishment of proposal policies. He will continue to serve as chairman of the Proposal Review Board and will administer



V. F. Cernuto R. E. Bechtol

all phases of proposal preparation.

Cernuto will be responsible for implementation of program plans, monitoring of program schedules and production activities as they relate to the plans and schedules, and reporting progress and program status.

"These appointments and organizational realignments are further steps in the division's effort to strengthen and improve its position in getting new business as well as assuring that in-house programs will proceed on schedule in accordance with approved plans," said Famme in making the announcement.

General Dynamics NEWS

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NO GUESSWORK—Jim and Darla Mortensen demonstrate proof that new home-built suitcase-size electronic computer can predict—on the average—outcome of make-like bets on a roulette wheel. At work, Mortensen is a GD/FW laboratory technician.

What About 00?

Computer Keyed to Calculate Odds on Roulette Wagering

Jim Mortensen only bets on a "sure thing," which in this case happens to be his own home-built roulette computer.

"It hasn't failed to win for me yet," confides the IVU laboratory technician at GD/Fort Worth, who hastily admits that most of his winnings have been on paper.

But he and wife Darla have a standing offer from a Las Vegas croupier to try their luck—and machine—at any time, and they plan ultimately to do so.

Mortensen's computer, which is built into a small leather overnight case, can handle only bets offering up to 2-1 odds. For example, any one of the roulette wheel's 36 numbers can pay off at 2 to 1 on eight different combinations — odd-even, red-white, first 12, and so forth.

As the wheel goes into action, the machine stores up a quick history and within minutes is flashing on lights which tell Mortensen where to place his money.

The machine can't predict each spin of the wheel "correctly," but it can—Mortensen claims—unfailingly predict a "trend."

"For example," he said, "if the computer signals that the ball will stop in the 1-12 number group, I know for certain it will stop there within four rolls. If it takes more than one roll, you simply increase your bet each time to compensate for any earlier 'losses.'"

The principle applies to other operations of the wheel.

"Everything tends to equalize itself," Mortensen points out. "This is the theory on which the computer is built. In industry, we call it the law of probability. If you flip a coin long enough, it'll come out 50 per cent heads, 50 per cent tails."

Mortensen, who started taking radios apart when he was three years old (and just recently learned to put them back together), built the machine in about nine months, with help from his brother, Jack, a tool designer at Boeing-Wichita.

Innards of the computer — capacitors, resistors and such—had to be special-ordered, Mortensen said. The relays were taken from a pinball machine and modified.

Around the lab, Mortensen is jocularly alluded to as the "man who broke the bank at Monte Carlo." And his compatriots may be closer to the truth than they think.

Mortensen has on the drawing boards an "advanced computer" capable of taking all odds on any number on the wheel. Only obstacle at present is a $15,000 building cost.



"Okay, everybody! The sodas are on me."

Air Marshal Of Indonesia Tours Plant

Air Marshal R. Iskander, Minister of Air Communications for the government of Indonesia, spent part of a day last week (July 3) at the General Dynamics/Convair plant in San Diego.

He inspected the 990As slated for Indonesia's Garuda Airways, was briefed on pilot and maintenance training set up for Garuda flight and ground crews, and received information on current GD/Convair programs.

Air Marshal Iskander is making his United States visit to study the field of civilian air operations, under sponsorship of the Government Affairs Institute, Washington, D.C.

Budget Executives Elect Fred Minter

Fred N. Minter of GD/Convair was chosen president of the San Diego Chapter of the Budget Executives Institute at the 13th annual conference held recently in San Francisco.

Minter, manager of indirect budgets, also conducted a panel on "The Research Budget," during the conference. Other General Dynamics men participating on the panel were H. Carter House, chief accountant at General Atomic, and Gary Gonlag, GD/Astronautics supervisor of indirect budgets.

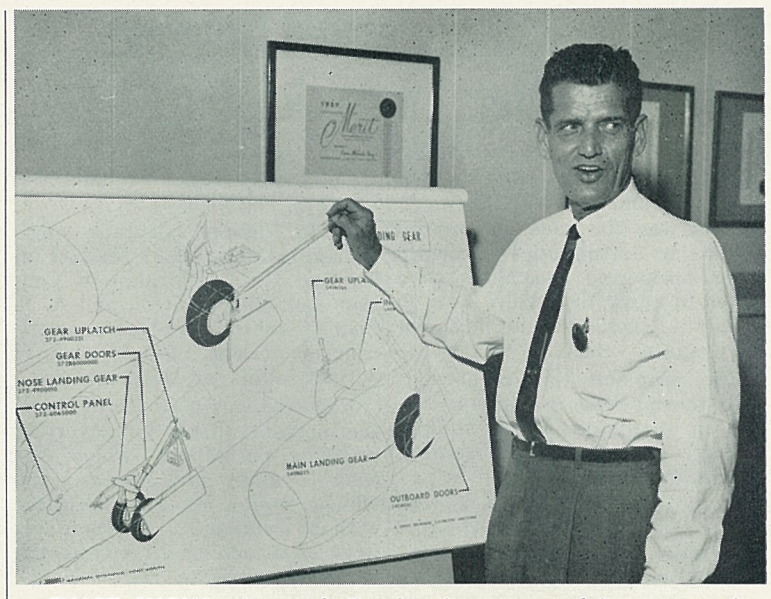


CHART SHOW—Aerotechniks drawings as used in presentation are demonstrated by J. H. Herbert, GD/Fort Worth engineering publications supervisor.

'Aerotechniks' Devised To Disseminate Data

A new method for disseminating technical information at GD/Fort Worth offers enormous potential savings in time and effort.

J. H. Herbert, engineering publications supervisor, evolved the "controlled graphic" method over the past few years, and even coined a name for it: aerotechniks.

Briefly, aerotechniks involves a uniform method of presenting drawings of technical data to all necessary functions simultaneously.

"Previously, the various manufacturing and design functions operated in an orderly sequence," said Herbert. "But today, product design, tool design, plant layout, material processing and other functions require drawings at the same time."

Accordingly, illustrators from Herbert's group draw the many individual parts of a component —as they did in the manufacture of two B-57 wings here — and piece them together in a series of pictorial drawings and exploded views.

"And herein lies the great savings," Herbert said. "Formerly, each group involved in a project would have its own drawings made at different sources. This was quite costly, since time studies have shown that about 75 per cent — or more — of the time spent by creative people was in familiarizing themselves with the job."

Under the regular method, if it took an artist about 10 hours to draw a landing gear, for instance, and this drawing was required by 15 different sources, the total time spent would have been about 150 hours. But with one source making all drawings, compiling them, and issuing to all 15 groups, most of the duplication is eliminated.

Using drawings prepared from a combination of scaled aerotechniks, "the exact location of mechanical or electronic components is comparatively simple," Herbert said. "For instance, the location of a heat exchanger in a wing area allows the designer to see his part in place without awaiting completion of a mock-up. This would allow him to easily check the clearances on tube and harness routing on all installations, and it would also help the structural designer in locating necessary cutouts and open areas needed for a certain system."

Herbert says that aerotechniks has paved the way for the first time for substantial savings in the incubation or "idea" time spent on such projects.

Formerly, he said, most savings were effected in such areas as preparation, distribution and reproduction—a relatively minor part of the overall cost.

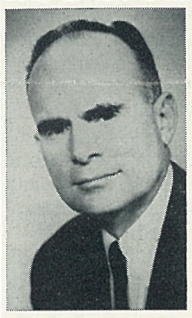
"Transmitting technical information by presenting three-dimensional objects on a two-dimensional plane is similar to regular orthographic drawings, but differs in that it may be easily understood by people with little training in print reading," Herbert said.

In addition to their concurrent usage by a variety of departments, aerotechnik drawings can be applied to many other media.

Flip charts, brochures, miscellaneous engineering reports, transparencies and flip charts for presentations and training purposes, and technical manual illustrations all can be made from a basic aerotechnik drawing.

Seven Sons and Daughters Earn General Dynamics Scholarships

Five sons and two daughters of General Dynamics parents in four divisions have received General Dynamics Corporation Merit Scholarships for the year 1963.



A. A. Hendrix

Algie A. Hendrix, General Dynamics vice president - industrial relations, announced that GD/Astronautics, GD/Electric Boat and GD/Fort Worth each had two winners, and GD/Convair, one. All of the young people, top students in their schools and at the head of the list in National Merit Scholarship qualifying tests, will receive awards ranging from $1,000 to $6,000, spread over four years of college.

"General Dynamics takes great pride in the accomplishments of these fine young people," Hendrix commented.

Winners are:

GD/Astronautics — Sylvia A. Kalitinsky, daughter of Andrew Kalitinsky, program director — NOVA, Dept. 504-00; Theodor G. Tanalski, son of T. T. Tanalski, Dept. 592-0, applied research lab, and Mrs. Tanalski, formerly of GD/Convair inspection.

GD/Convair — James S. Warniak, son of Stephen Warniak, Dept. 16-1, technical publications.

GD/Electric Boat — Pamela J. Bowler, daughter of Thomas Bowler, draftsman; Kenneth R. Goodearl, son of Ralph Goodearl, electrical supervisor.

GD/Fort Worth — Richard S. Brandt, son of Fred Brandt, Dept. 160 senior design engineer; Hervey S. Hutchins IV, son of H. S. Hutchins III, project design engineer.

Sylvia Kalitinsky is a recent graduate of Brearley School for Girls, New York, where she won prizes in poetry and math and was a member of the volleyball team. She plays the cello and has a keen interest in dramatics—she has acted in, and done stage settings for, a number of amateur performances.

Two years ago she attended Junior Playmakers Summer School for Drama at University of North Carolina, where she won first prize as best all-around student.

This fall she will enter University of California at Berkeley where she will major in mathematics.

Ted Tanalski is a June graduate of La Jolla High School where during his senior year alone he was recognized for participation in Naval Electronics Lab competition; received the Bausch & Lomb award as outstanding science student; Bank of America trophy and certificate for 100 per cent membership in California Scholarship Federation, and honor certificate from his school.

He received a first-place award in the junior physics division, Greater San Diego Science Fair in 1960, and this year repeated the award in senior electronics at both the local and California State fairs.

He also ranked in the top 10 per cent of entrants in this year's Westinghouse Science Talent Search, and in 1961 was selected to attend a special National Science Foundation summer session at University of the Pacific.

Ted will attend University of California, Berkeley, this fall, majoring in physics.

James Warniak, 17, was graduated last month from Clairemont High School where he had been an honor student in mathematics and science. A life member of the California Scholarship Federation, he had maintained a straight A average the last three years.



James S. Warniak, winning GD/Convair son.

In addition to the GD Merit Scholarship, he won an Irvin J. Kahn Scholarship of $100 for exceptional ability in his field and a Bank of America Achievement Award in English.

James was a member of the team which won overall city and county honors in the GD/Astro Mathematics Contest.

He has been a member of the Junior Engineering Technical Society and is active in the St. Mary Magdalene Catholic Youth Group.

He will enter Massachusetts Institute of Technology this fall for a major in mathematics, heading toward a career in aerospace science.

Richard Brandt, 17, is a graduate of Arlington Heights High School where his major subjects were science and math. He graduated magna cum laude, scoring a grade point average of 3.986 of a possible 4.0.

He was a member of Young Citizens Forum, Allied Youth, and National Honor Society, and was business manager of the school newspaper.

Richard plans to attend Michigan State University where he will major in mathematics.

Hervey Hutchins, 18, also graduated from Arlington Heights High School where he majored in general science. He graduated summa cum laude and was the highest ranking boy student in his class.

He was a member of the National Honor Society, Student Council J-Club, and held office in the High School Red Cross and Young Citizens Forum.

Hervey will major in physics at Rice University.



Theodor G. Tanalski, left, and Sylvia Kalitinsky, GD/Astronautics son and daughter.

Hervey S. Hutchins IV, left, and Richard S. Brandt, GD/Fort Worth sons.

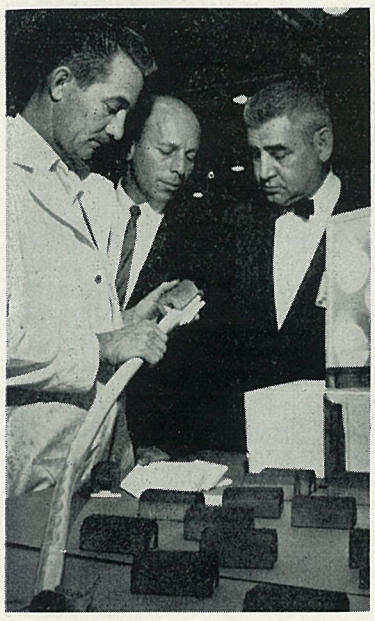
Simple and Inexpensive Scheme Solves Problem in Packaging

Simplicity often pays dividends, even with the most sophisticated space-age hardware.

This was the case at General Dynamics/Astronautics recently when packaging specialists were asked to apply their know-how on behalf of the Centaur high-energy space vehicle.

The problem: to protect delicate thermostats in Centaur hydrogen peroxide lines against damage during ground handling operations.

D. E. McMurtrey, packaging engineer of applied manufacturing research and process development (Dept. 290-1) was assigned to the project, with an assist from J. J. Perecko Jr., material handling engineer.



PACKAGERS — C. M. Ogle, left, D. E. McMurtrey and J. J. Perecko of GD/Astro Dept. 290 demonstrate plastic foam protective packages developed to protect Centaur hydrogen peroxide line thermostats during vehicle handling. Packages are cut from salvaged material in which acid bottles are received at GD/Astro.

J. M. Rager, Centaur engineering (Dept. 961-3), T. L. Finley and G. R. Eldridge of Centaur reliability control, and A. P. Pedo, Centaur production engineering (Dept. 971-5) helped define details of the problem.

Required was a device to shield thermostats from inadvertent bumping or impact; which was easy to apply and remove; and which would remain in place without clamping to peroxide lines or attaching directly to the vehicle surface.

Several schemes, some of them quite complex, were considered and rejected.

Plastic foam, because of its rigidity, workability and shock absorbing qualities, seemed to hold promise, and after some experimentation the team devised a two by three-inch foam block with a cut-out channel for the peroxide line.

This is held firmly over the thermostat by common rubber cement which adheres—upon contact—to a thin sheet of foam slipped under the line.

Ed Horgan, technician in Dept. 290 laboratory, added the clincher.

The protective packages could be had at negligible cost—by cutting them from salvaged plastic foam packing material in which acid bottles are received by several GD/Astro departments.

In only a few hours, C. M. Ogle (Dept. 290-1) turned out a year's supply of the packages from salvaged foam.

As a finishing flourish (all protective packages must be removed when Centaur is prepared for flight), the "super-simple money-savers" have been given a coat of red paint to make them easily visible.

Old Mexico Tourists To Meet Tomorrow

A meeting has been set for tomorrow (July 11) of all General Dynamics people who plan to join the tour of Old Mexico in August.

James Hardison of GD/Convair Dept. 15, tour conductor, urges all travelers to attend the gathering at 7 p.m. in the Convair executive dining room, Pacific Hwy.

Sporting Dogs Will Compete

Some General Dynamics' dog will be lapping his meals from a fancy container if the winner of the coming Gun Club's Dog Show is allowed full use of the champagne bucket going to top dog!

But just how many prize-winning pups are going to see the cigarette lighters they win in their classes is problematical.

ARA-CRA Gun Club members, as well as all other General Dynamics employees in the area, are urged to parade their hunting dogs at the July 20 informal show at Gillespie Field Rifle Range, said CRA Commissioner Jack Swank.

Starting time is 1:30 p.m. Only sporting breeds will be accepted for showing.

Best of show will get the champagne bucket and best of breed in puppy class, under four months, and adult class, four months and over, will receive lighters.

Warner "Gunner" Gatterman is show chairman. Judges will be Mr. and Mrs. Fon Johnson of Fon Jon Kennel Club.



HOPEFULS—Shotzie and Bridgette, German short hair and English pointer belonging to Warner Gatterman, guard champagne bucket which will go to best of show in ARA-CRA Gun Club's' July 20 Dog Show.

General Dynamics Folk Invited To Attend Astro's Open House

All General Dynamics people in the San Diego area are invited to the public open house of General Dynamics/Astronautics this Saturday, July 13.

GD/Astro facilities at Plant 71 (Kearny Mesa), the materials building, Bldg. 92, and Plant 19 (former Convair Plant 2) will be open to visitors from 9 a.m. to 5 p.m.

Of special interest will be tours of production areas where Atlas and Centaur vehicles are built, and facilities where space-age electronic devices are fabricated.

Visitors will have an opportunity to meet the new astronaut trainees from Edwards AFB.

During special ceremonies at 1 p.m. a "space-time capsule" will be installed outside the main lobby. The capsule, containing predictions of future exploits from top national authorities will be opened 100 years from now, in 2063.

A continuous showing will be held of Atlas and Air Force movies in ARA Clubhouse auditorium.

Top ranking company, Air Force, and NASA officials will be present for the occasion.

Special colored post cards will be given out as souvenirs. They may be mailed, in-plant, from stations in Bldg. 4.

General Increases In Wage, Salary Set

(Continued from Page 1)

from $15 to $20 per day for employees and dependents, with the company paying the cost of increase for both; and extension of dependent insurance coverage to cover unmarried children to their 23rd birthday who are full-time students and dependent upon the employee for support.

Also at GD/E, the company will provide personal liability insurance coverage of $50,000 per person or $300,000 maximum per accident for employees directed to use their cars and carry other employee passengers while working. The coverage will apply after the employee's personal liability insurance has been used.

75 lbs. of Yellows

Al Jones of CRA Delta Divers speared, what seemed like a ton, of yellowtail on a recent diving trip.

Two of Jones' diving cohorts, Commissioner Harry Rusciguo and Bob Mitchell, watched goggle-eyed, they said, as Jones brought up one big fish after another off the Coronado Islands June 29. Altogether, he snared five, totalling about 75 pounds.

Eleven GD/Astro Men Decorated For Bravery

Eleven GD/Astronautics employees have been honored by the Air Force for voluntarily risking their lives to save a $10 million Atlas missile launch complex from destruction.

Presentation of awards was made late last month by Maj. Gen. W. Austin Davis, commander, Ballistic Systems Division (AFSC), in ceremonies at Norton Air Force Base.

GD/Astro employees Nels E. Erstad, Jack E. Kay and Alois F. Pajak received the second highest honor the Air Force can bestow in peacetime, the Exceptional Service Award.

Receiving the Air Force Scroll of Appreciation signed by Eugene M. Zuckert, Secretary of the Air Force, and Curtis E. Le May, Air Force chief of staff, were Charles Jones, Robert C. Morris and Richard L. Oblander.

To Earl E. Coon, Rene C. McDowell, M. W. Beheler, George S. McHenry and Thomas S. Strait went the BSD Commander's Award.

Because of distant assignments, some were unable to attend the ceremony.

Awards resulted from a mishap in September, 1962, when, during a demonstration countdown on a Series F Atlas at a Dyess AFB, Texas, launch complex, a heavy safety platform was torn from position and hurtled to the bottom of the 150-foot deep launch silo.

As the falling platform crashed through missile support equipment it caused damage resulting in what Gen. Davis termed "extremely hazardous conditions."

The GD/Astro men entered the silo in an emergency action to avoid rupture of the Atlas and to clear the silo of explosive oxygen vapors.

Gen. Davis credited the team with saving the complex from total destruction.

Representing GD/Astro management at award ceremonies were W. L. Van Horn, vice president and program director—Atlas weapon systems, E. D. Bryant, vice president - operations, and R. C. Harbert, director of customer service.

Three Dimensions

Design Engineer Shuns Oils To Try Hand at Sculptures

Relating Atlas weapon system structural design and the fine arts may seem incongruous to some, but not to Francis A. Pall, General Dynamics/Astronautics design engineer (Dept. 375-1).

His hobby is sculpture — a recent switch from earlier oil painting work.

The Hungarian-born engineer changed his medium a year ago by enrolling in sculpture classes at Northwest Adult High School. Results to date are three works, soon to be exhibited at the Art Center in La Jolla.

"Sculpture is more tangible than painting," Pall says. "You can feel it. I like the three-dimensional effect."

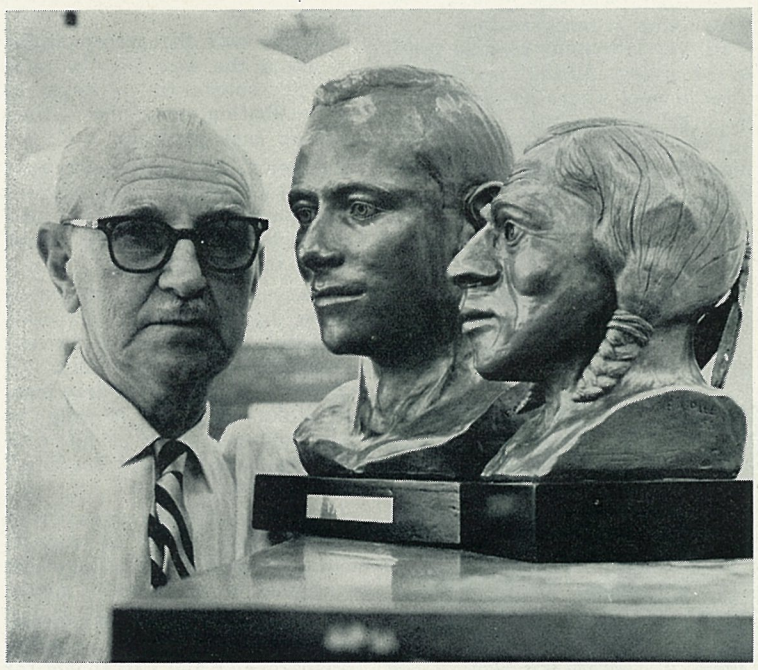
His first work was a figure of St. Francis; then an Indian bust modeled after the head on a five-cent piece. Recently completed is a bust of his youngest son, Francis, and a companion-piece of his first-born, Robert, is "in the works."

Pall's sculpture is done at home in a room recently converted to a studio. His wife of 33 years provides moral support.

"She's my built-in critic," he chuckles.

Works thus far have been in clay (terra cotta) to which Pall adds a bronze patina. But he has no intention of stopping here.

"Someday," he predicts, "marble."



TRIO—GD/Astro engineer-sculptor Francis Pall displays two terra cotta works produced in his first year of sculpturing. Center is bust of his youngest son, and at right is Indian figure modeled from face on buffalo nickel.

JULY 15 DEADLINE FOR STATE CLASSES

General Dynamics employees intending to enroll in fall semester late afternoon and evening classes at San Diego State College have been reminded that admission deadline is July 15.

This is the final date admission or readmission applications will be accepted from either undergraduate or graduate students.

The college has announced classes in a variety of fields, mostly at upper-division undergraduate and graduate levels, scheduled conveniently for those employed during the day. Degree and credential programs are available.

Employees desiring more information have been asked to contact the college directly. A limited number of course bulletins are available from educational services at both GD/Convair and GD/Astro.

Salvage Schedules Set at San Diego

Saturday schedule for employee sales at GD/Convair and GD/Astronautics salvage yards for the next four weeks is:

GD/Astro—July 27. (Closed July 13.)

GD/Convair — July 20, Aug. 2.

Sales hours are from 8 a.m. until noon at both sites. Employees are reminded not to bring small children into the yards.

SELF-IMPROVEMENT COURSE TO START

Another of its popular self-improvement courses for GD/Astro women will open under ARA sponsorship July 22, although in a different setting than that of previous classes.

Sessions in the current series will be held at John Robert Powers Studio, 426 B St., with weekly meetings, Mondays, 7:30 to 9 p.m. over a seven week period.

Series cost is $25 per person, with a $10 deposit payable at the first session. Classes are limited to 15 persons to assure individualized instruction.

Prospective participants have been asked to register directly with the studio, calling 234-7263 between 9 a.m. and 9 p.m., weekdays.

Auto Fans to Motor To El Centro, Yuma

GD/Astro, GD/Convair and GD/E sports car enthusiasts have been invited to participate in an El Centro-Yuma tour sponsored by ARA Sports Car Club, July 20 and 21.

Tour starts from Grossmont Shopping Center (south side) at 7:30 a.m., July 20. Participants will be placed in order of arrival, and maintain this sequence throughout the tour.

The route is planned to include rest stops at various points of interest.

The group plans to arrive in El Centro by noon and participants have been asked to bring their own lunches. Those not wishing to continue will begin a return trip at this time.

"Two day" tourists will continue to Yuma where they will remain overnight.

Prizes will be awarded for special events conducted en route.

Additional information is available from E. N. Yeaton, ext. 2415 at Plant 1.

Joint Garden Show Slated For Aug. 11

ARA-CRA Garden Clubbers will display the best their gardens can provide at the joint club Summer Show, Sunday, Aug. 11, 1 to 6 p.m. in Balboa Park's Floral Association Bldg.

Included will be judging of dahlias, fruits, vegetables, flower arrangements, corsages and a special children's division. ARA Commissioner Everett Henderson and Gene Zimmerman, CRA commissioner, announced there will be "best of show" awards in 13 categories.

Entries will be accepted at the Floral Assn. Bldg. from 7 to 11 a.m. on the day of the show.



JOB DONE—GD/Convair mechanics stand beside first launcher assembled at White Sands Missile Range for Little Joe II launch vehicle. In front row (from left) are J. D. Sanders, Dept. 48 inspection; E. R. Compton, D. D. Guest, D. D. Claxton, H. F. Whisman, A. E. Bittner, all Dept. 131. In back are O. Ray, L. K. Thornbrugh, W. C. Willenborg, also Dept. 131 experimental.

Wage-Salary Analyst Receives BS Degree After Years of Study

Another GD/Convair man has joined the ranks of persistent scholars whose long stretch of patient night study has paid off.

J. J. Jackson, wage and salary senior analyst at GD/Convair, ended 26 years of undergraduate night classes when he received his BS degree in business administration from San Diego State College last month. He claims two years more than Ray Boggs (**General Dynamics NEWS**, June 26, 1963).

Jackson took his first college course in 1937 at Duquesne University, Pittsburgh, Pa. The next year he attended Carnegie Tech. Then came a couple of years' lapse while he was first with GD/Convair, 1940-42, in inspection. He left GD/Convair to serve in the Air Force until 1945, but meanwhile took another course at the University of Vermont.

From 1948 to 1950 he attended St. Petersburg Junior College, Fla. After rejoining GD/Convair in 1950, he transferred his credits to San Diego schools, attending San Diego City College for a year before entering the industrial management certificate program at San Diego State in 1954. When he had completed his 27 units for that program in 1959, he decided he might as well continue for a full major in industrial management.

Two Dynamics Men Elected by Chapter

Newly-elected officers of the San Diego Chapter of the National Association of Professional Contract Administrators include two General Dynamics men.

T. A. Bankhead of GD/Electronics data products-administration is new secretary and J. G. Dumas, GD/Convair service parts contracts representative, treasurer. A. M. Barnise, GD/E Plant 2 contracts administrator, was outgoing president.

Guest speaker at the June 25 installation was B. P. DuMars, director of contracts for the Autonetics Division of North American Aviation, Inc.

Pistol Club Trio Tops Two Events

CRA Pistol Club's top trio won the first three spots in both events in June 23 competition.

Joe Williamson (Dept. 401) was first in .22-cal. Police Course scores with 296. Jim Halfacre (Dept. 140), followed with a 291, and W. G. Walker of Dept. 6, third, 287.

In the .45-cal. Short National match, Halfacre and Williamson traded standings with Halfacre high man with 260. Williamson trailed with 251. Walker stood in third again with 240.

Next club match will be this coming Sunday, July 14.

GD/CONVAIR MAN TO WED

Frank Boyle of GD/Convair Dept. 401-7 and Velma Burnett have announced their plans for a July 20 wedding in the chapel of San Diego University. They will make their home in San Diego following a trip to San Francisco.

Beauchamp Leaves To Continue Study

E. J. Yannaccone of Dept. 48 X-ray laboratory will be handling all calls and requests for information in the field of radioactivity at GD/Convair Plant 1 with the resignation of Lou Beauchamp, who has left the company to continue his scientific studies.

Yannaccone, who has been loaned to the medical section on a part-time basis, may be reached at exts. 1509 or 2421, Plant 1.

All calls regarding industrial hygiene environmental problems and toxicity studies should be directed to the safety office, headed by M. C. Val Dez, ext. 464.

Prints of Planes, Missiles Offered

General Dynamics people, based at Plant 1, now have a chance to fill out their collections of pictures of company-built planes and missiles.

GD/Convair employee services has on hand a supply of colored prints of the R3Y-2 Tradewind, T-29 trainer, F-106, all built at the San Diego plant, and a number of prints of GD/Pomona-built Terrier missile.

The prints are being given away to General Dynamics employees as long as they last. They may be picked up from the insurance counter in Bldg. 32, Plant 1.

Coin Club's Display Wins Second at Fair

CRA Coin Club's display won second place among numismatic exhibits at the San Diego County Fair at Del Mar.

The group's entry featured a collection of service pins, emblems, and medals associated with the company throughout the years. All items had been loaned by employees.

John Barrett, manager of inspection for GD/E and club president, thanked everyone who contributed to the collection and especially praised George Stewart, chairman, for his endeavors to make the display as complete as possible.

Next meeting of club members will be July 18, 7:30 p.m., in the Convair executive dining room, Pacific Hwy.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

ARCHERY — Regular club shoot July 14, Balboa Field Range.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome.

COIN CLUB — Regular meeting July 18, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA Summer Flower Show, Aug. 11.

GUN CLUB—Registered ATA trapshoot, July 14; registered skeet shoot, July 21. Dog Show, open to all GD employees, July 20, 1:30 p.m., Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children under 12, 25c.

PISTOL CLUB—Regular club shoot July 14, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (July 11), 8 p.m., Harbor Drive headquarters.

ROAD RUNNERS — Weekend outing to Pair-a-dice Trailer Park, July 19-21.

ROLLER SKATING — Free skate night July 15, Skateland, Front and G Sts. Tickets at employee services, Bldg. 32, Plant 1.

SOFTBALL — Plant league games Tuesdays and Thursdays, 6:45 and 8:20 p.m., John Adams Playground, 35th and Adams Sts.

SPORTS CAR CLUB — ARA Sports Car Club tour to El Centro and Yuma weekend of July 20-21. General Dynamics drivers invited at no charge.

SWIMMING — Family swim night July 20, Mission Beach Plunge, 7-9 p.m. Free tickets at employee services, Bldg. 32, Plant 1.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 1657, or Jack Loos, ext. 1437, both Plant 1.

Road Runners Hold Social

Installation of new officers for CRA Road Runners was held at a social night on June 20 at Gillespie Field Clubhouse.

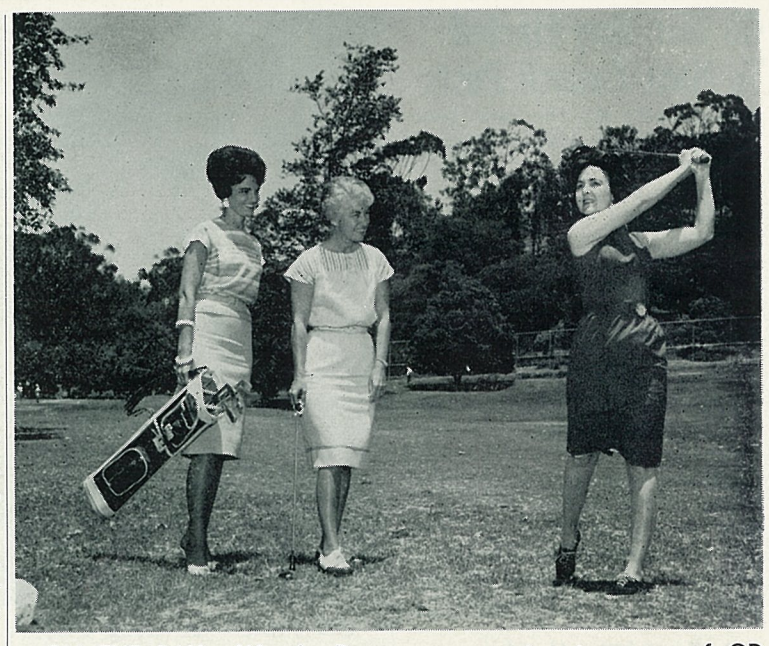
Outgoing president George Hurley Jr. of Dept. 16 presented the gavel to new president Carl Scholl (Dept. 6). Other officers installed were Loretta Devin, vice president; Regina Wawrzynski, secretary-treasurer; new judicial board members, Rolland Lathrum (Dept. 171), Ivar Peterson, and Chuck Risner (Dept. 48); teenage representatives, Carol Perkins and Tom Hurley.

Gifts were presented to outgoing officers and Peterson presented an engraved gavel to Hurley.

The last year saw the Road Runners ranging far and wide, from the desert in the winter to the mountains in the summer. The club won first prize at the Del Mar Rally last September.

Next outing is set for the weekend of July 19-21 to Pair-a-dice Trailer Park at Guatay. In charge as wagonmaster is Lee Kunkle, assisted by Ray Devin.

Anyone employed by GD/Convair or GD/Electronics, who owns a trailer or camper, is eligible to join the traveling group.



ON THE BALL—Wanda Rose, new secretary-treasurer of GD Women's Golf Club, and Peggy Tracy, vice president, admire follow-through of newly-elected president, Mary Ransom.

GD/Electronics Girls to Head Growing Feminine Golf Group

Three GD/Electronics girls will head the mushrooming General Dynamics Women's Golf Club for the next year as the group of embryo golfers, which has boomed from a nucleus of six to 33, swings into a full schedule of links activities.

Mary Ransom was elected president June 21. Peggy Tracy is new vice president, and Wanda Rose, secretary-treasurer.

Committees are: audit and budget, Pat Fries and Jo Ann Kranz; tournament, Peggy Tracy, Arlene Miller, Nellie Bryant; publicity, Stevie Ericson; social, Margaret Clark and Joy Ward; membership, Emma Webb and Juanita Tilaro.

Full-scale tournament play is now in the offing as soon as all girls establish handicaps. So far, they have been learning the fundamentals of the sport under direction of Ernie Paul, president of GD/E Men's Golf Club, and few have felt brave enough to take a turn around the fairways.

However, Paul is certain that his Tuesday and Thursday evening instruction sessions are shaping the girls' swings, so they will soon be turning in creditable scores on nine-hole courses, at least.

Members are urged to turn in their cards from three games to Lydia Stephan, handicap chairman, by Aug. 1 so that handicaps may be figured and a schedule of tournaments set up before the end of the summer. Lydia may be reached at GD/E Plant 1, ext. 2106.

Meanwhile, Paul is continuing his twice-a-week lessons at Mission Bay Golf Course driving range free of charge. Any General Dynamics woman is eligible to attend the 6 p.m. sessions on Tuesday and Thursday evenings.

The GD Women's Golf Club also plans social events as well as golf competition and all members will be advised of coming activities by a monthly newsletter, "Tee Time."

Discounts Offered For Ice Capades

GD/Convair and GD/Electronics people may still pick up discount coupons to the July 25 and 28 performances of Ice Capades at GD/Convair employee services, Bldg. 32, Plant 1.

The coupons allow $1 reduction in prices for the two dates when exchanged at the Ice Capades box offices at U.S. Grant Hotel or Westgate Park.

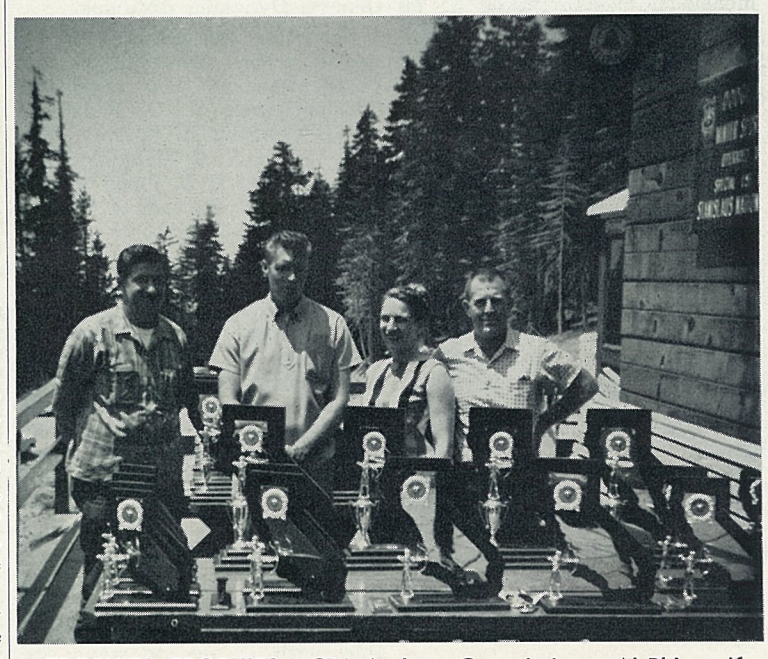
CRA Archers Journey to High Sierras To Compete in California State Shoot

Two bowmen of the CRA Archery Club won top places with their marksmanship at the State Field Archery Shoot June 15-16.

Diane Vetrecin won second in women's free style amateur class and Manuel Nunez took a third in junior boys' free style during the two-day meet held at Dodge Ridge Ski Lodge, 50 miles northeast of Sonora in the High Sierras.

Another General Dynamics winner was Gene Hasenbeck, son of Hal Hasenbeck of GD/Pomona, who came in first in the cub free style division with a total score of 1,057 for 72 targets.

Among GD contestants traveling to the meet was CRA Commissioner Al Phipps, vice president of the California Bowman Hunters and Field Archery Association.



TROPHIES, TROPHIES—CRA Archery Commissioner Al Phipps (far right) stands with other state officers with a few of trophies awarded at recent state meet in foreground. Other California Bowman Hunters and Field Archery Assn. officers are, from left, Vernon Smith of San Jose, Douglas Walker of Fresno, president; Mrs. Shirley Townsend of Hathaway Pines.

GD Men Are Elected To NMA Council Posts

Two posts on the new board for San Diego Area Council of National Management Association Clubs will be filled by General Dynamics men for the 1963-64 term.

R. G. Macomber of GD/Convair accounting was elected treasurer and W. E. Magnuson of GD/Astro reliability support publications, secretary, at the June 26 election of officers.

They will be installed along with A. E. Froehlich, Ryan Management Club, newly-elected president, and A. R. Purdy of Advanced Structures, vice president, on Aug. 3.

L. G. Lawson of GD/Convair remains on the board as past president.

GD/Fort Worth Men Head Tech Writers

Fred Bachmann of GD/Fort Worth service engineering has been elected executive chairman of the Fort Worth chapter of the Society of Technical Writers and Publishers.

Other GD/FW employees elected were Carl King, executive vice chairman; J. R. Westbrook, first vice chairman; E. V. Bartley, recording secretary; C. J. Gilliam, corresponding secretary, and Doyle Weatherly, treasurer.

New directors are W. O. Denman and R. V. Hendricks.



ON TRIAL — Lt. Doug McCrimmon, project test pilot, Weapon System Test, NAS, Patuxent River, Md., and R. F. Schillinger, terrain following radar project manager at GD/Electronics - San Diego, check over installation of system on A4C jet plane before start of Navy evaluation of GD/E radar.

GD/E's Terrain Radar Tested by Navy Pilot

Military tests of the terrain following radar developed by General Dynamics/Electronics-San Diego were completed, as scheduled, late last month at the Naval Air Test Center, Patuxent River, Md.

Termination of the first military trials of the GD/Electronics system came June 20 as the test plane, a Navy A4C light attack jet aircraft, went into a three-week check.

During the 46-day period, from May 6 to concluding date, 39 evaluation flights were made during 24 flight days in a wide range of conditions — at clearance heights down to 200 feet, different speeds, all kinds of weather, and over a great variety of terrain.

Most of the flights, with Lt. Doug McCrimmon, Navy Weapon System Test project test pilot at the controls, were made over the approved low-level test route across demanding rugged regions of the Appalachian Mountain chain.

According to R. F. Schillinger, TFR project manager at GD/Electronics, test results are expected to be favorable. "We have every reason to anticipate that evaluation reports will be satisfactory. And, our project team certainly is gratified and impressed by the Navy's interest shown by the acceleration of the program when it was stepped up to three flights a day during the final week.

"The Patuxent trials aroused interest in other areas. Representatives from the British Royal Navy, U.S. Army, and Cornell Aeronautical Laboratory visited the site during the tests, especially to get information on the system. The Air Force, also, has expressed interest in progress and results of the program."

R. B. Williams, GD/E engineering representative, was assigned to the Naval Air Test Center during the trials. Schillinger, together with other GD/ Electronics men—General Manager John L. Lombardo; J. L. Brooks, manager of engineering; R. L. Olson, systems engineer—visited the Maryland base on different occasions to monitor progress.

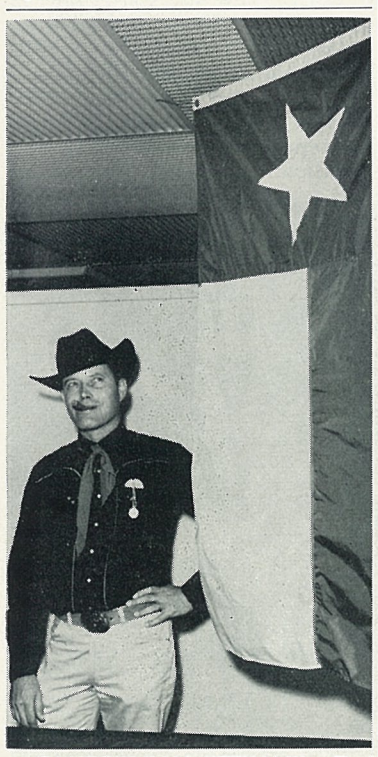
According to present planning, the Navy jet craft will return to San Diego around the middle of this month for removal of the equipment. A final Navy evaluation may be made en route with a demonstration of the GD/E system at NOTS, China Lake, Calif.



R & D REPORT—General Dynamics men heading up manufacturing research and development activities at various divisions meet in San Diego to pool project progress. T. E. Piper of GD/Pomona (standing) explains new project study to (from left) W. C. Graham, General Atomic; R. E. Stewart, Electric Boat; V. G. Mellquist, GD/Astronautics; R. K. May, GD/Fort Worth; E. W. Feddersen, Corporate director of manufacturing engrg.; M. D. Weisinger, GD/Convair.

Research in Dynamics Divisions Discussed in Coast Conference

Current and prospective programs in fields of advanced research under way at six General Dynamics divisions were discussed fully at a meeting of manufacturing research and development managers called together at San Diego by E. W. Feddersen, Corporate director of manufacturing engineering.



CALIFORNIAN "TEXAN"—Ted Draper of GD/Convair engineering took to Lone Star state and customs like a native, even to complete Western outfit, while on special assignment. Attire was so authentic Draper's wife didn't recognize him as he got off plane at San Diego.

The two-day session, June 24-25, was one of similar gatherings held periodically to review scope and status of manufacturing development and research within General Dynamics divisions.

Reporting on independent research work, sponsored by the Corporation, at their respective divisions were M. D. Weisinger of GD/Convair; R. K. May, GD/Fort Worth; V. G. Mellquist, GD/Astronautics; T. E. Piper of GD/Pomona; R. E. Stewart of Electric Boat; and W. C. Graham of General Atomic.

W. R. Crain, representing the Corporate government accounting function, outlined conditions and definitions of the Armed Services Procurement Regulation as they concern funding and justification for independent research and development and the sharing and ceiling conditions set for industry.

General discussion centered around potential programs initiated by NASA and Aeronautical Systems Division of the Air Force which may become available, with an eye to ways and means of improving the chances of General Dynamics' share through sales efforts.

A tour of General Atomic's manufacturing facilities rounded out the agenda.

Airline Honors 'Scotty' Doig

John "Scotty" Doig, GD/Convair chief of service parts, is proud possessor of the first award ever given by American Airlines in recognition of service "beyond the call of duty."

The plaque, bearing American's insigne, has place of honor on Doig's office wall. It is especially meaningful to Doig because it was one of the emblems from an American Airlines' Convair 240, built during the era Doig directed 240 manufacture as factory superintendent.

A letter from the airline's general purchasing agent, Myrl L. Chapman, which accompanied the award, said: "Over the years since you have assumed the responsibility of spare parts support for the Convair 240 and 990, you have taken a great deal of personal interest in the American Airlines' account, especially when we have had statewaits (planes down due to lack of parts); therefore, this plaque is awarded to you in recognition of 'beyond the call of duty' type service rendered.

"You might be interested in the fact that we have never had occasion to make a similar presentation to anyone else. Please do not rest on your past laurels—we may reclaim this plaque at any time!"



HONORED—John Doig, chief of GD/Convair service parts, shows secretary, Norrine Hoberg, plaque given him by American Airlines for service "beyond call of duty."

Wohl Transfers To New York

Robert A. Wohl, former SLV manager of program control and administration for GD/Astronautics, has been appointed assistant to the General Dynamics vice president contracts and pricing, C. L. Meador, at Corporate headquarters in New York City.



R. A. Wohl

Wohl, who received his early schooling in Milwaukee, Wis., attended the University of Wisconsin and was graduated from San Diego State College in 1952, after which he served two years as an Air Force officer. He joined GD/Astro in 1956 as a contract analyst and had served in the post of manager of contracts at Astro.

He was admitted to the California bar in 1960 following receipt of his law degree from University of San Diego. He attended the University of California law school from 1954-56.

Teague Named To Corp. Post

B. D. Teague has been appointed administrator of wage and salary programs for General Dynamics Corporation, Algie A. Hendrix, vice president - industrial relations, has announced.



B. D. Teague

Formerly manager of employee relations at the company's Stromberg - Carlson Division in Rochester, N. Y., Teague has been with General Dynamics for 13 years. He began his career with the Fort Worth Division in 1950, specializing in industrial relations work.

From early in 1961 to July, 1962, he was assigned to GD/Astronautics to assist in the program to activate 13 Atlas missile bases which that division constructed in 11 states.

A native of Texas, Teague received a B.B.A. degree in industrial relations from North Texas State University in 1949.

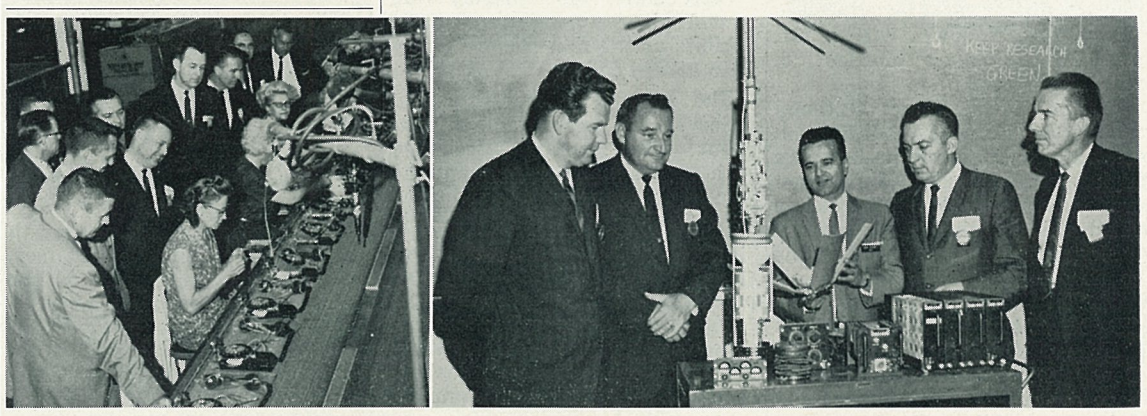
Field Reps Briefed at Rochester On Phone-Making, ASW Devices

General Dynamics field office representatives, from coast to coast, observed how telephones are made at Stromberg-Carlson and saw the intricacies of a wide range of anti-submarine warfare equipment at GD/Electronics — Rochester during a series of briefings at the New York-based facilities last month.

The program familiarized delegates from various sections of the country with communication products produced by the two GD divisions. The briefing was designed to strengthen field office marketing potential in behalf of General Dynamics divisions.

G. V. Bureau of Corporate Office coordinated the three-day meetings held during two successive weeks. Host at Stromberg-Carlson was T. C. Thompson, vice president—sales; and at GD/Electronics, Sidney R. Curtis, vice president—plans and programs.

Of particular interest to the group were such products as Stromberg-Carlson's electronic telephone switching equipment and multiplex systems, and GD/Electronics' single sideband communication equipment and anti-submarine warfare gear.



PRODUCT TOUR—General Dynamics field office representatives toured GD/Electronics-Rochester and Stromberg-Carlson recently. At left they see how telephones are made at S-C, while at right John R. Hughes of GD/E (center) explains ASW equipment to R. W. Menzel, Washington Office; R. M. MacIver, Colorado Springs; Paul Brandt, Red Bank, N.J.; Elliott Spurway, Washington.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 15 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, July 24, 1963



FIRST OUT—First of three Convair 990As, slated for Indonesia's Garuda Airways, rolled out of final assembly in Bldg. 3 at GD/Convair this month, is now in field operations. Delivery of initial jet craft is scheduled for August.

Courses in Technical Writing Included in Summer Program

Sixty-three persons from General Dynamics divisions in San Diego are currently enrolled in the accredited technical writing courses now in progress under GD/Convair's in-plant summer session program.

The three classes, each carrying three units of credit, started the first week in July and will continue throughout August.

Registration at first class sessions saw 24 signed for the course in "English for Technical Writers" taught Mondays and Wednesdays by Louie Henderson of GD/Convair Dept. 15. A second class in the same subject, held on Tuesdays and Thursdays under Bill Stewart of GD/Astro, had 19 students. Twenty entered the Technical Writing I course, taught by F. L. Linderman of Ryan Aeronautical Co., on Tuesdays and Thursdays.

All General Dynamics people enrolled in the three supplementary courses will be heading toward the new Technical Writing Certificate. The current courses are all requisites under the newly-established program, set up in cooperation with San Diego Junior Colleges.

These same courses, together with other requisites and electives, will be scheduled for the fall semester, starting Sept. 16, said L. W. Turner, GD/Convair educational services coordinator. Applicants for the Certificate of Proficiency in Technical Writing must complete satisfactorily the five required courses and two electives, for a total of 21 units.

Classes will be held either in plant at GD/Convair, or on the Russ St. campus of San Diego City College.

GD/E Combines Material Control

Material control function at GD/Electronics Plant 2 (Hancock St.) has been combined with the GD/E Plant 1 material control operation and relocated in Bldg. 51.

K. R. Farnsworth is material control supervisor of the combined operation, said L. A. Wood, GD/E manager of material, in announcing the reorganization.

J. J. Altschaeffl, material control representative, will coordinate all material control activity between the two facilities. He will be located at Plant 2 and may be reached at ext. 80 at the Hancock St. site.

Procurement planning section, headed by W. W. Lynt, and material stores function, operated by T. B. Woodruff, will remain at Plant 2.



KICKOFF—Louie Henderson of GD/Convair Dept. 16, instructor, briefs students at opening technical writing class in division's in-plant summer session program.

Alaska Airlines, FAA 880-Ms Fly 'Home' For Maintenance at GD/Convair Facilities

Two Convair-built 880-M jetliners, which have been in service for almost two years, returned to their home plant last month for maintenance work in GD/Convair field operations and primary assembly.

Alaska Airlines' 880-M was at the San Diego plant for a fast engine change June 25. The plane went into lay up at 2:40 p.m. and was out and ready for its flight back to Seattle, Wash., by 10:10 that night. Alaska Airlines has been using the Convair jet transport on its Seattle to Fairbanks runs since summer of 1961.

The 880-M, flown by Federal Aviation Agency since Sept. 1961, arrived at GD/Convair the same week for a 10-day maintenance chore which included wing tank sealing treatment.

Speedy Access To Data Eyed In Value Study

An improved method of storing and retrieving vital information for design engineers to save hours of search time was explored by one of the six teams in GD/Convair's latest value control seminar, June 25-July 5.

The division's Standards Information Retrieval System, which is supposed to provide easily available, up-to-date information on off-the-shelf vendors' products or methods, as well as government, industry, and GD/Convair standards, was under scrutiny.

The study was triggered by a recent industry survey which found that engineers spend almost four hours a week locating information on components, materials, and equipment for products under design, explained H. P. Williams, value control manager.

The six-man team devoted their time in seminar No. 17 to ferreting out ways to make such information as accessible as possible.

Consideration of a microfilm service for dissemination of all standards information was strongly recommended in the team's final report.

While this team was studying a more efficient method of collection, storage, and retrieval of standards data within the plant, three other teams carried on with the investigation of a new business endeavor at the pre-proposal stage. They picked up where the previous seminar left off the week before. The two remaining teams considered various manufacturing aids and materials for other projects which may be in the offing for GD/Convair.

Said President J. H. Famme, in reviewing team reports: "This is the area where value control really pays off! When we can apply value engineering techniques and principles at the very early stages, we are approaching bids for new business on a realistic and competitive basis.

"Also, I am most gratified to see our value control function turning its attention to such projects as the evaluation of our standards information system. It is extremely important that we place in our designers' hands for ready reference up-to-date information on all standards and specifications. An efficient system can save designers' time, and provide a broader field in choosing equipment and items at a lower cost with greater reliability."

Value control efforts during the summer months will be directed mainly to special problem areas,

(Continued on Page 2)

Little Joe II Launch Nears

First Little Joe II launch vehicle produced at General Dynamics/Convair for Apollo Program spacecraft testing left the San Diego plant early last week for White Sands Missile Range, N. M., where its initial test flight is scheduled in the near future.

The primary purpose of the coming test will be to check out the Little Joe II launch vehicle which will be topped by a full-scale mockup of a "boilerplate" Apollo payload. The Apollo Project is this country's manned lunar exploration program.

The 30-ft.-long Little Joe II launch vehicle was loaded on an extendable, low-bed trailer at the GD/Convair plant for its trip to the New Mexico site. Three other trucks transported accessories and the dummy Apollo payload, which includes an adapter section, Apollo spacecraft and launch escape system.

GD/Convair President J. H. Famme commended all connected with the Little Joe II program: "I wish to thank all of you for the outstanding job you are doing. It is this kind of effort that is typical of GD/Convair, and will be recognized by our customers. I am confident that such recognition will lead to new business for GD/Convair."

J. B. Hurt, Little Joe II program manager, added his plaudits:

"The wonderful spirit shown by all of our people makes me very proud. During the delay in shipment of the first Little Joe II for incorporation of new requirements into the launch vehicle, the high-level effort to satisfy the high quality of NASA installation and systems requirements has been tremendous.

"Engineering, manufacturing, manufacturing control, inspection, and all other functions concerned worked at top level of speed and efficiency, two shifts a day, many hours a week, since May 3 to complete the task.

"One example of the amount of effort which went into the move-out was illustrated by the documentation section. Over the final weekend, a 60-ft. stack of documentation, including the data acceptance package which must be with the launch vehicle at WSMR, was turned out in a round-the-clock shove to be finished on time."

Little Joe II is a solid-fuel launch vehicle produced by GD/Convair for National Aeronautics and Space Administration. The contract is managed by NASA's Manned Spacecraft Center, Houston, Texas.

Little Joe II has been designed specifically for unmanned, suborbital testing of the Apollo spacecraft. It is a relatively inexpensive launch vehicle, incorporating many proven, off-the-shelf systems and components.

To meet NASA Apollo test requirements, GD/Convair has built a high degree of flexibility and reliability into the vehicle.

The propulsion system, for example, can be tailored to meet specific mission requirements. The vehicle can accommodate as many as seven Aerojet-General Algol 1-D solid-fuel motors, producing 720,000 lbs. of thrust. Or it can be adapted to use combinations of Algol and other off-the-shelf, solid-fuel motors to suit test mission requirements, enabling it to achieve a variety of altitudes and velocities.

Simplicity and reliability have been designed into the Little Joe II airframe which consists of a cylindrical body about 13 feet in diameter and four fins. The airframe is produced in two sections —a forebody about 19 feet long and an afterbody about 10 feet long. The four fins, each about 50 square feet, are spaced around the afterbody.

The 100,000-lb. launcher, which will aim the Little Joe II launch vehicle in azimuth and elevation,

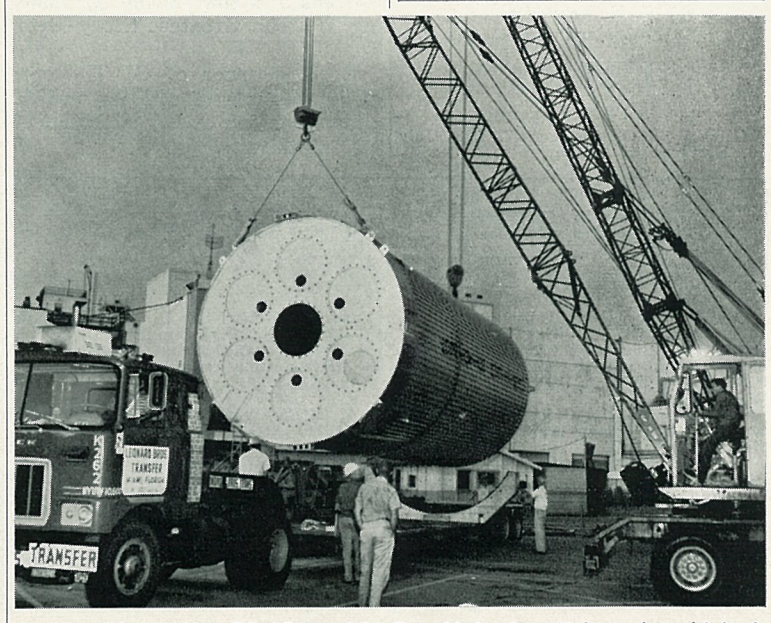
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GD/E Receives Ranger Task

A contract totaling more than one-half million dollars has been awarded to General Dynamics/Electronics-San Diego by the California Institute of Technology's Jet Propulsion Laboratory of Pasadena, Calif.

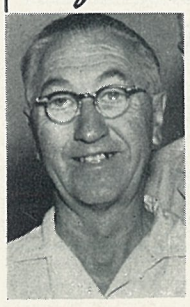
Under the contract GD/Electronics will develop, fabricate and test radar subsystems for RANGER spacecraft. RANGER is a National Aeronautics and Space Administration project designed to increase man's knowledge of of the moon.

F. P. Devine has been named RANGER program manager for GD/E, according to John L. Lombardo, general manager. Devine will report to W. S. Stroud, REINS program manager.



ON ITS WAY—GD/Convair's first Little Joe II launch vehicle is swung onto huge trailer July 15 for trip to White Sands Missile Range, N. M., where it will be readied for flight test next month.

Log Book Entries



Wesley M. Schlagenhauf, Dept. 140, who completed 35 years with company this spring, received watch on occasion of his retirement this month.

Service Emblems

CONVAIR

Service emblems due during the period July 16 through July 31.

Thirty-year: Dept. 6-2, J. M. Hudson.

Twenty-five-year: Dept. 11-0, G. D. Clark; Dept. 131, C. E. Hall.

Twenty-year: Dept. 6-7, D. R. Conklin; Dept. 14-4, Pedro Juarez; Dept. 16-6, Thelma I. Howe; Dept. 48-63, C. A. Keeth, E. M. Truitt; Dept. 101, G. H. Rosen; Dept. 131, E. B. Kerfled, R. H. Lang; Dept. 133, Vivian S. Keech; Dept. 140, O. G. Offill; Dept. 400-4, Alice D. Catron.

Fifteen-year: Dept. 25-1, S. C. Davis, Carra A. Wallace; Dept. 42-1, W. R. Killeaney; Dept. 48-36, G. F. Ellers; Dept. 97-3, J. J. Shultz; Dept. 171, Jesus Manzano, A. C. Wende.

Ten-year: Dept. 1-22, Rita M. Tambornino; Dept. 6-2, R. H. Hurd; Dept. 23-1, Stanley Leith; Dept. 25-6, P. O. Jones; Dept. 48-90, L. O. Luce; Dept. 140, N. P. Peralta.

GD/ELECTRONICS

Ten-year: Dept. 71-00, B. G. Allen.

Retirements

CONVAIR

ASARO—Frank, Dept. 25-2. Seniority date Oct. 17, 1950, retirement effective July 2, 1962.

DUNNE—Cecil E., Dept. 204. Seniority date Aug. 19, 1952, retirement effective Aug. 30, 1962.

FLEMING—Earl G., Dept. 25. Seniority date Dec. 12, 1950, retirement effective July 5, 1963.

FREEMAN—Ezra D., Dept. 31. Seniority date Dec. 19, 1956, retirement effective June 15, 1963.

FULLER—John, Dept. 160. Seniority date July 11, 1950, retirement effective Sept. 16, 1962.

GOTTSCHALK—Vallie E., Dept. 48-81. Seniority date Nov. 30, 1950, retirement effective April 29, 1963.

LEACH—Theodore C., Dept. 48-42. Seniority date Feb. 14, 1952, retirement effective May 24, 1963.

McNUTT—Josie T., Dept. 14-8. Seniority date June 24, 1952, retirement effective June 3, 1963.

OLSON—Clarence H., Dept. 22-5. Seniority date Dec. 7, 1950, retirement effective May 31, 1963.

PETRIE—Lewis W., Dept. 48-62. Seniority date March 9, 1951, retirement effective March 10, 1963.

SHEFFIELD—Olive H., Dept. 142. Seniority date Oct. 16, 1951, retirement effective Oct. 7, 1962.

WATTS—Sam, Dept. 25-5. Seniority date Jan. 5, 1951, retirement effective June 1, 1963.

WELCOME—Robert N., Dept. 206. Seniority date Feb. 12, 1953, retirement effective May 28, 1963.

Births

CONVAIR

LARSEN—Daughter, Karen Janice, 6 lbs., 10 oz., born June 29 to Mr. and Mrs. Don Larsen, Dept. 6-3.

Personals

CONVAIR

I am grateful to my good friends from the photo lab for their welcome visit.
G. A. Beckstrand.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending July 5 and July 12.

Dept. 91, E. J. Stanley, $10.

Dept. 93, A. E. O'Brien, $10.

Dept. 101, H. M. Woodard, $13.90.

Dept. 119, J. Juanico Jr., O. Mitchell, joint award, $5 each.

Dept. 128, E. E. Carpenter, $37.50.

Dept. 171, A. I. Cox, D. W. Kennedy, joint award, $5 each.

Cost Improvement Proposals for same periods.

Dept. 4, A. L. Ratz.

Dept. 6, M. C. Tombler.

Dept. 42, R. L. Ingraham.

Dept. 93, K. K. Verseckes.

Dept. 131, W. Martin, A. C. Oehler.

Deaths

CONVAIR

ORIVA—R. J., Dept. 14-7. Died July 13. Survived by mother.



SCORCHER — W. M. Parker, GD/Convair Dept. 6, operates universal tensile testing machine as new materials and processes lab equipment operates to bring temperatures up to 3,000 degrees F.

New Heat Test Device in Use

A method of testing specimens of exotic materials at extreme temperatures and high loads has been developed, and is now in use, by GD/Convair materials and processes laboratories.

The GD/Convair test method has produced heats as high as 3,300 degrees Fahrenheit during a material testing program currently under way for Narmco Research and Development Division. Thirty specimens of high-heat resistant metals will be put to the test of high temperatures while loads are applied at each end in a check of the strength of Narmco's new method of brazed joints in this type of advanced materials.

The lab's method of obtaining such high uniform heats uses a water-cooled induction coil as the heat power source with specimens placed within a carbon ring inside a glass vacuum chamber.

W. M. Parker of Dept. 6, who is in charge of the present test project and headed development of the elevated temperature testing equipment, said:

"This unique method can be used in a variety of studies of many other materials at extreme heats, and, we expect to be called on to put our equipment to use for more test programs of this nature."

Capabilities of the GD/Convair materials laboratory are available for test projects of other General Dynamics divisions as well as those of outside industry. E. E. Keller is assistant group engineer in charge of the laboratories.

GD/E Analyst Goes On Hollywood Set

A GD/Electronics material analyst, who has made analysis of motion pictures his avocation the last 20 years, was called to Hollywood a couple of weeks ago to watch producer-director George Stevens in action during the filming of "The Greatest Story Ever Told."

R. L. Warner of GD/E Dept. 41-30 was one of a dozen people allowed on the closed set by special invitation.

Speedy Access To Data Eyed In Value Study

(Continued from Page 1)

said Williams. Small task forces will concentrate on specific methods and systems needing attention. Regular 5 or 6-team seminars will resume in the fall.

Seminar No. 17 team members, departments, project leaders were:

Team No. 1—S. A. Griffin (69), W. M. Parker (6), J. M. Singleton (15), G. W. Oliver (101), L. E. Brown (140). Project leader, L. E. Roth.

Team No. 2—R. A. Porter (6-2), J. M. Somers (34-2), R. J. Ratliff (171), C. D. Nelson (133), W. E. Fitzsimons (6-0). Project leader, Carl Uhl.

Team No. 3—Bill Bullock (15), Percy Wuthnow (171), Andy Young (140), Paul Bergstedt (6-6), John Struthers (6-9). Project leader, Bill Lavis.

Team No. 4, Standards Information Retrieval System—H. W. Rubottom (3-2), M. H. Button (133), D. De Crescenzo (6-2), F. R. Howard (34), M. O. Starr (6-0), J. L. Terrien (91-4). Project leader, C. L. Hibert.

Team No. 5—W. R. Panke (140), C. O. Rhea (97), R. F. Holmes (6), E. K. Yager (6), Harry Ashton (16). Project leader, Lavis.

Team No. 6—D. S. Pratt (6), Ed Schiff (6), R. J. Williams (15), H. Siegenfield (48), R. C. Beezley (123), H. F. Horan (140). Project leader, Hibert.

Savings Earn CIP Awards

Two GD/Convair supervisors who have saved the division more than $25,000 through their Cost Improvement Proposals were tabbed MacSave-its for April and May at the last Management Club meeting.

Lee W. Stamper, Dept. 119 assistant foreman, received the trophy for April for his CIP which spelled out a method of stabilizing a specific type of glass cloth so that it could be used in several C-141 assembly build-ups, saving considerable time.

Stamper has the cloth stretched over a frame, sprayed with a light wash coat of resin. After it has dried it can be cut and fitted to any assembly build-up much faster than the former method. Savings amount to $2,160 and 759 manhours.

Herb B. Day, Dept. 16 supervisor, was MacSave-it for May for his suggestion for use of a new type of copy paper in graphic reproduction which will save GD/Convair $23,727.

His proposal has resulted in the use of Bruning Copy Bond paper in connection with the 914 Xerox Copier, replacing several more expensive types of paper.

Last of JAL's 880-Ms Leave

Final 880-M jetliner of Japan Air Lines' fleet of eight of the Convair jet transports left the GD/Convair plant at San Diego early this month on its delivery flight to Tokyo.

This is the last of the follow-on order of three 880-Ms ordered by JAL late last year. These are joining the first five over JAL's wide-flung passenger routes, though slated for service on the airline's domestic runs, connecting the cities of Tokyo, Sapporo, Osaka, and Fukuoka.

JAL inaugurated 880-M passenger service in September of 1961 and by fall of the next year had its first five 880-Ms flying over routes as far distant as London, with stops in Asia, Egypt, Italy, and Germany.

Convair Son Earns Music Scholarship

A four-year music scholarship has gone to a talented GD/Conair son, Richard Smith, whose father, Clarence, is a fatigue research specialist in the structures lab.

Richard, 17, received the scholarship from Peabody Conservatory of Music, Baltimore, Md., where he will continue his training on the organ.

A June graduate from Mission Bay High School, the young musician had his first music lessons on the piano at the age of 7. He has been studying the organ the last five years.



SEMINAR NO. 17—GD/Convair men, 32 in all, who completed latest full workshop value control seminar on July 5, hoist diplomas high on concluding day.

Six Adult High Schools Offer Chance to Work for Diploma

General Dynamics people who wish to continue their education toward a high school diploma have the advantage of six Adult High Schools in the San Diego area as the fall school semester nears.

Day and evening classes are offered to help meet the work schedule of people in industry, point out GD/Convair and GD/Astro educational services personnel.

Credit may be allowed for work experience and courses taken at special schools and credit may be given by test in specific subject fields. Vocational training and in-plant courses may be evaluated for high school credits.

General requirements for a high school diploma include completion of 32 semester credits, including six each in English and a major field, two each in United States history, American government, science and mathematics.

Veterans who have served over 90 days with an honorable discharge, and who entered the service before Sept. 16, 1940, may receive high school diplomas by successfully passing the General Educational Development Tests and completing two semesters each of United States history and American government.

Adult High Schools in San Diego are: Clairemont Adult High, Hoover Adult High, Memorial-Lincoln Adult High, Midway Adult High, Northwest Adult High, and San Diego Evening Adult High.

In addition, three junior colleges offer the opportunity to earn college credit at day and evening classes—San Diego City College, San Diego Mesa College, San Diego Evening College.

Pre-registration at the Adult High Schools will be Sept. 3 through 13. Pre-registration is open at the junior colleges and should be made as soon as possible. Classes start Sept. 16.

GD/CONVAIR SON LEADS HIS CLASS

Raymond J. Darwell, son of Joe Darwell of GD/Convair Dept. 131, held the highest scholastic standing in his class at the end of the school term at Creighton University's School of Dentistry, Omaha, Neb.

Raymond, who just completed the first year of the four-year dentistry course, had a 3.6 average, out of a possible 4.0. His was the highest average of any of the 46 students in his class.

He completed his three years of pre-med study at St. Mary's College of California with a 3.7 average and was a straight A student at St. Augustine's High.

Little Joe II Leaves For Missile Range

(Continued from Page 1)

has already been installed at White Sands.

When ready for launch, the vehicle and payload will tower nine stories high.

Purpose of the first flight will be to qualify the Little Joe II launch vehicle for later flights with the "boilerplate" Apollo payload and Apollo spacecraft built to production standards. The Little Joe tests will provide engineering information for use on manned Apollo orbital flights.

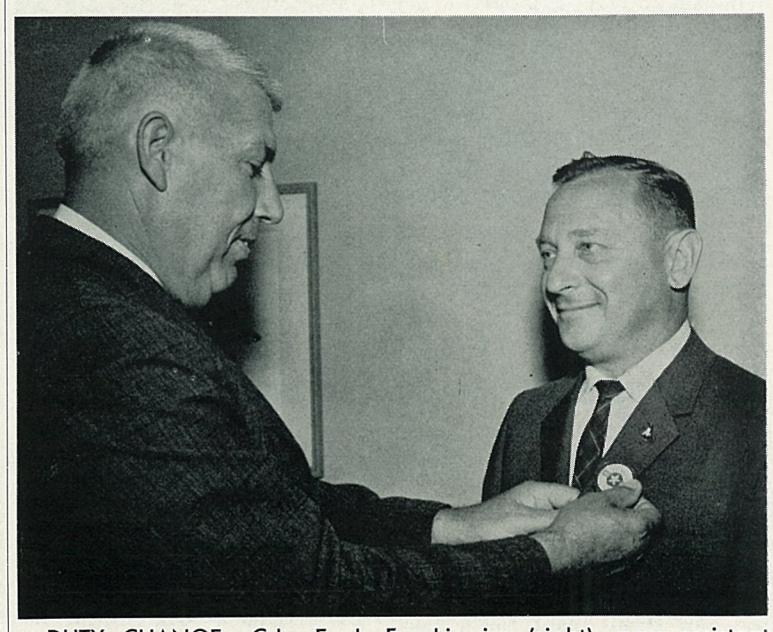
Heading the Little Joe II program at GD/Convair is J. B. Hurt, program manager.

New Assistant BuWepsRep Reports For Duty; Former Maintenance Officer in Japan

Cdr. E. J. Frankiewicz, USN, reported for duty late last month as Assistant Bureau of Naval Weapons Representative at San Diego with offices on the fifth floor, Bldg. 19.

He succeeds Cdr. D. B. McOmie, USN, who has held the post from Aug. 31, 1962, until June 28 of this year. Cdr. McOmie has assumed new duties with Carrier Air Group 12, Naval Air Station, Miramar, Calif.

The new assistant BUWEPSREP came to San Diego after two years as aircraft maintenance officer at the U. S. Marine Corps Air Facility, Iwakuni, Japan.



DUTY CHANGE—Cdr. E. J. Frankiewicz (right), new assistant BUWEPSREP at San Diego, is "pinned" by outgoing executive officer, Cdr. D. B. McOmie.

General Dynamics NEWS

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All Divisions Send Electro Dynamic Help

All General Dynamics divisions quickly came to the assistance of Electro Dynamic in its hour of need. Machine tools were shipped by Canadair, Convair and Stromberg-Carlson, and the U. S. Navy also sent tools. The Corporate Office in New York contributed office furniture and equipment.

The prompt assistance from sister divisions, as well as offers from scores of business concerns in the Bayonne area, was given credit for much of the rapidity which marked the division's come-back.

ELECTRO DYNAMIC MAKES COME-BACK FROM NEW PLANT

Electro Dynamic Division of General Dynamics, whose Bayonne, N. J., plant was destroyed by fire April 20, is now "back in business," operating from a new facility 16 miles away at Avenel, N. J.

The new plant at Avenel, formerly occupied by Art Metal Corp., provides 350,000 sq. ft. of working space, approximately 30 per cent more than the old plant at Bayonne. The new plant address is 150 Avenel St. The phone number is 636-9100, area code 201.

Within a week after the fire, more than 90 per cent of all orders had been reconstructed and all customers contacted at least once. An inventory of motors in field warehouses helped maintain the flow to customers.

Navy Bureau of Ships officials opened files to E. D. representatives the first working day after the fire and reproduction of plans, drawings and correspondence, to replace files destroyed in the blaze, began at once. Navy production priorities were being established at the same time. Meanwhile, Electric Boat Division also was supplying drawings for priority items.

Critical Polaris submarine motors were first on the priority list. On April 30 crews were given six weeks to produce the first submarine motor. The first motor was shipped two days ahead of deadline.

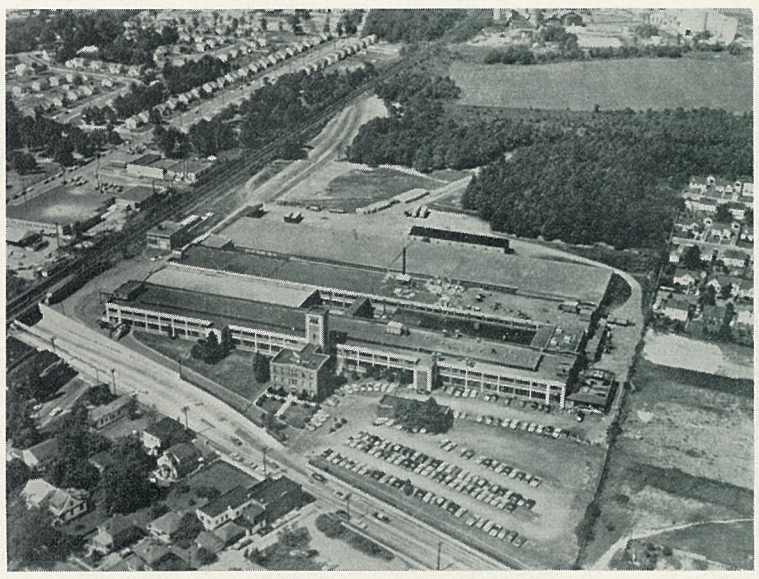
"Shock mounts needed for shipping the first motor were flown in from E.B. at 2 in the morning . . . bearings with a normal lead time of 40 weeks somehow appeared on schedule . . .

"There has been no delay in the Polaris or attack class submarine building program, thanks to this recovery program," a division publication reported.

"These results could be accomplished only by people of the caliber and dedication that we feel is General Dynamics' greatest asset," Algie A. Hendrix, Dynamics vice president-industrial relations, commented. "We are proud of the progress to date and confident of E.D.'s ability to support President Roger Lewis' statement following this fire that 'all commitments to customers will be met with a minimum of delay.'"

R. B. Carey Jr., E.D. president, added:

"I was confident that this E.D. group could accomplish the task of recreating a business. The results, however, have exceeded my most optimistic hopes."



NEW FACILITY—Aerial view shows new plant at Avenel, N.J., which has been occupied by Electro Dynamic Division. Former plant, at Bayonne, N.J., was destroyed by fire.

Four New Office Managers Named to Key Dynamics Posts

New managers were appointed recently to General Dynamics field offices.

George J. Vila is in charge at the newly established Cleveland Office; E. A. Reynolds is manager at the Omaha Office; A. S. Witchell Jr. heads the Langley Field (Va.) Office; while James Walden Jr. is in charge at the Sacramento (Calif.) Office.

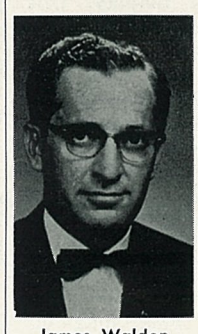
Vila, who has been with the company since 1940, had been in the Washington Office for the past 11 years before transfer to Cleveland where NASA's Lewis Research Center is located. The Center has authority over the Atlas-Agena and Atlas-Centaur programs in which GD/Astronautics is involved. A 1940 graduate of University of Florida with a degree in mechanical engineering, Vila held various engineering posts before assignment to Washington in 1952. Since 1959 he has been responsible for liaison with NASA.



E. A. Reynolds



George Vila



James Walden



A. S. Witchell

Reynolds, formerly head of GD/Astro's long range planning and since 1958 manager of Astro's product support department (involving support for the Atlas missile after delivery, spares provisioning, service and field engineering etc.) joined Consolidated Aircraft in 1935 as a group engineer after seven years with Douglas. Two years later he was a member of an engineering expedition to Russia to assist in PBY manufacture. After a period as project engineer at Vultee's Downey Field, he was chief project engineer at the Allentown division during war days.

Witchell, a 1939 graduate of Texas A & M, was an Air Force pilot in World War II and joined the company in 1947 at Fort Worth as a flight captain. He was named chief pilot in 1954 and later was product support base manager. He is a graduate of the Air Force Experimental Test Pilot School as well as the AF Engineering School (now the AF Institute of Technology). Witchell made many of the early test flights on the B-58. He has logged more than 7,000 flight hours, more than half in test flying new military aircraft. At Langley, Witchell will be dealing primarily with the Langley Research Center, operated by NASA, and with Headquarters, Tactical Air Command.

Walden attended Baylor University and joined the company at Fort Worth in 1950, going to the Dayton Office the following year and returning to Texas in 1954 to head the San Antonio Office. He is a former mayor of El Paso. At Sacramento Walden will be dealing primarily with Air Materiel Area Command, which will have complete logistic support responsibility for the F-111, and with NASA's Ames Research Center.

Scientists in 990 'Chase' Eclipse Path

An American Airlines 990 Astrojet, built at General Dynamics/Convair, followed the path of the July 20 eclipse of the sun to give a group of scientists, writers, broadcasters and cameramen a 35,000-foot-high "ringside seat."

The 990 followed the "total darkness" path, extending through a part of Maine, Canada, and Alaska to give its passengers one of the best possible views of the total eclipse. Other parts of North and Central America, and the entire continental United States, saw only partial coverage of the sun.

Navy Funds Continued For GETOL Research

General Dynamics/Convair will continue engineering studies on a Ground Effect Takeoff and Landing (GETOL) airplane under a $128,000 contract awarded by the Bureau of Naval Weapons in Washington, D. C., it was announced recently.

The study contract is part of a long-range program intended eventually to ascertain the effectiveness and economy of utilizing the GETOL airplane principle.

A GETOL airplane would be supported on a ground effect air cushion during vertical takeoff (or landing) and during acceleration over an unimproved land or water surface. It would then cruise conventionally.

Under the contract, GD/Convair will conduct seven months of static testing with different planform models to determine the configuration with the best inherent stability and control characteristics while in the ground effect mode.

The tests to determine the models' reaction both in and out of ground effect will be conducted at a special GETOL static testing facility adjacent to the company's low speed wind tunnel.

GD/Convair has already studied air-moving methods and established design criteria for the complex ducting required to produce the cushion of air under the plane. Other GETOL studies conducted by GD/Convair during the past five years have included both wind tunnel and hydrodynamic evaluations with models as well as extensive analytical work.



SCHEDULE CHECK—Phil Ward, GD/Convair senior requirements engineer—GETOL, and D. S. Oesterle, predesign project engineer, look over schedule set up for GETOL development and testing.

Operators Sing Praises Of GD/Convair Planes

"General Dynamics/Convair's reputation of 'best engineered and best constructed' aircraft still stands!"

That was the summation in a nutshell of the mass of information and expressions of opinion gleaned from Convair 880 and 990 airline operators all over the world during the latest tour of R. L. Runnalls in his capacity as GD/Convair airline performance engineer.

"The reputation of the Convair 880 and 990 series aircraft has advanced steadily," said Runnalls after a recent six-week trip which took him around the world. This was his second such complete inspection of Convair jet transports in operation, and third trip with Far Eastern operators.

"The Convair 990A is steadily proving itself to be the finest engineering example of high subsonic speed transportation. In one airline representative's opinion, the 990A may well become the No. 1 moneymaker of the entire contemporary jet fleet if its full potential performance capabilities are eventually utilized."

Runnalls checked with Japan Air Lines, Civil Air Transport, Cathay Pacific Airlines, Swissair, and American Airlines on his return to New York. Then, joined by L. J. Bordelon, chief of service engineering, he took part in the annual Trans World Airlines "line audit" of 880s on domestic routes.

"This trip was particularly heart-warming because it disclosed upward spiraling reliability of the 880M aircraft in the Orient, the elation of SAS and Swissair personnel with the converted 990A aircraft, and the devoted respect of TWA crewmen for the 880," Runnalls reported.

Landing in a JAL 880M on arrival at Tokyo he had the thrill of seeing the craft perform the way it is advertised. "We achieved a notable first for a JAL 880M operation upon arrival in Tokyo when crosswinds on the main jet runway were above limits and we were required to land on the short (just over 5,000 ft.) runway. This operation is not possible for many other jet operations but was an easy task for the 880M."

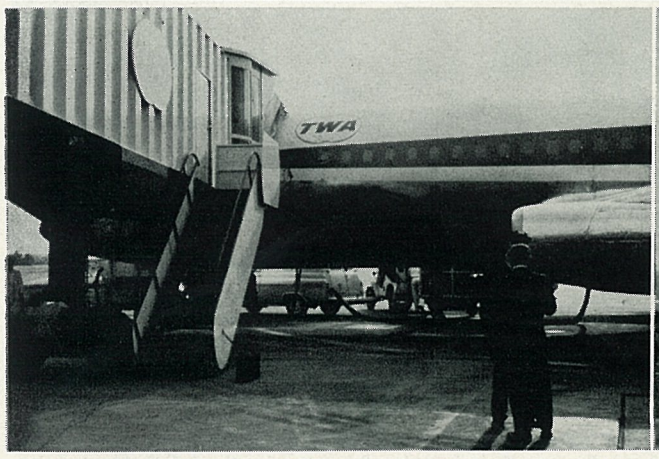
And, on the TWA "line audit" Runnalls, who flew 880 routes to observe flight operations, and Bordelon, who reviewed maintenance activities at New York, Chicago, Los Angeles, found that:

"Next to family and country, TWA crewmen like the 880 best!"

During the 11-day evaluation of TWA operations, sponsored by the airline itself, the two GD/Convair men were part of a group from other involved companies, such as Boeing, Lockheed, General Electric, Pratt and Whitney, Wright Aero, who scattered over the entire TWA route structure. Prime purpose of the yearly audit is to get true eye-witness reports from specialized observers on flight operations, ground operations, passenger service functions, maintenance practices.

According to Runnalls, the Convair 880 superlatives were described in terms of reliability (currently near first place in the TWA total fleet), flight characteristics, performance, and structural ruggedness.

"The overall operation of the Convair 880 by TWA crews continues to represent the finest reflection of good training and good attained efficiency that has been my pleasure to witness with any aircraft in the hands of any major air carrier."







WIDE-RANGING CONVAIRS—Convair 880 and 990 jet transports touch down at airports in all parts of world, as shown by shots taken by R. L. Runnalls, GD/Convair airline performance engineer, on recent review of operations around globe. In center is Swissair 990A at Geneva, Switzerland; at far right, JAL 880M stops at Honolulu on delivery flight to Tokyo; and at left, TWA 880 is snapped unloading at O'Hare Field, Chicago, Ill.



FAVORED—Joint CRA-ARA Ice Skating Club is "pet" customer of Mission Valley Ice Plaza which advertises fact on its Zamboni ice conditioner. Pictured are Instructor Dave Pencosky, left; Marcelle Prokop, daughter of GD/Convair's Mary Prokop, Dept. 27-6; Barbara Gilliland, GD/Astro Dept. 963-4, club president, and daughter, Kim, and ARA Commissioner Bud Davies.

Jack Swank Wins Two Events In ARA-CRA Gun Club Shoot

CRA Commissioner Jack Swank (GD/Electronics) shot himself to first place in two events at the CRA-ARA Gun Club's July 14 ATA registered trapshoot at Gillespie Field Range.

Forty-eight marksmen vied for the silver service trophies in soaring temperatures which neared 100 degrees and sent gunsmen to the water buckets to cool off their gun barrels.

Swank won Class A in the 16-yd. event with a 93 and took the 18-21-yd. handicap event with another 93.

Class B winner in the 16-yd. competition was Art Carey, 96. John Beamer of Astro won the shoot-off to break a 96-score tie with L. P. Johnson in Class C. Don Cost of Aetna Insurance won Class D with 93.

Carey shot a score of 84 to win the 22-27-yd. handicap.

W. U. Gatterman of Astro and Ellis Rhodes tied at 81s in the doubles event with Gatterman winning the shoot-off.

High lady for the day was Lois Smith with a score of 91.

A Troy-type trapshoot is scheduled for this Friday evening (July 26) at 7:30 p.m. at the CRA range. A regular club shoot will be held Sunday (Aug. 4).

Vending Service Name Changed

There has been a change in name and new uniforms for in-plant vending machine service crews, but personnel, management and services rendered are the same.

The parent service company involved is now Automatic Retailers of America. Davidson Brothers continue as a division of Automatic Retailers of America, a name adopted after Davidson Brothers expanded into a nationwide organization.

Joe Chandler continues as the Astronautics plant manager under John Adams, area manager, with headquarters at GD/Convair Plant 1.

Aerospace Society Invites Engineers

"Engineers, Sell Yourselves," will be the topic discussed by E. T. Clair at the Aug. 1 meeting of Aerospace Electrical Society, San Diego Chapter.

Clair, formerly of GD/Astronautics and now vice president of Cohu Electronics, will stress the importance of engineers marketing their services as a manufacturer markets his products.

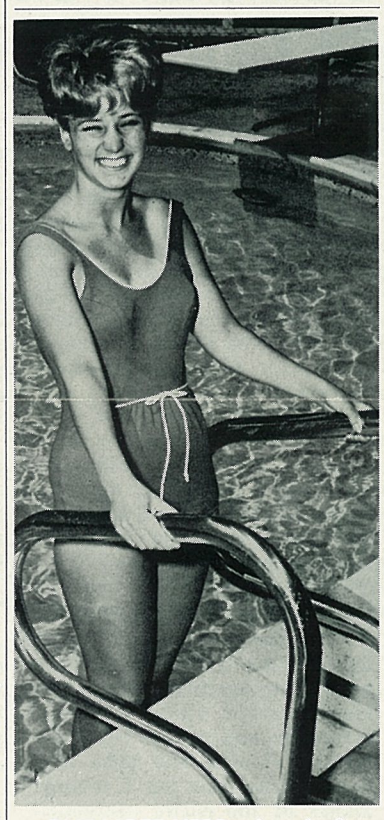
All General Dynamics people are invited to attend the 7:30 p.m. meeting in the IAS Bldg., Harbor Drive, said Bill Ochodnicky of GD/Convair Dept. 6, local chapter president.

GD Men Are Sought For 'Big Brothers'

General Dynamics men have been invited to participate in "Big Brothers of San Diego County," a group of volunteers who befriend boys suffering from lack of adult male guidance.

The organization reports 247 "Little Brothers" presently awaiting "Big Brothers."

Interested employees may contact the group at 520 E St., or telephone 234-9158 for information.



ONE VOTE HERE—Lovely Sandra Marie Thies, daughter of Astronautics' Evelyn McPhail (Dept. 836-12), was semi-finalist in annual Miss North Island contest. Pert Clairemont high graduate is 17, plans career in nursing.

Garden Show Set for Aug. 11

Commissioners Everett Henderson (ARA) and Gene Zimmerman (CRA) are making final arrangements for the joint ARA-CRA Garden Club summer show to be held Aug. 11 in Balboa Park's Floral Association Bldg.

Slated as the "biggest yet" the show will draw entries in five divisions from among the club's 300 members and other GD/Astro, GD/Convair and GD/E employees.

The show is planned so that almost any General Dynamics gardener may display the best of almost anything he has produced. Divisions include dahlias, citrus and deciduous fruits, vegetables, arrangements and corsages, plus a special children's class.

"Best of Show" awards will be given in 13 categories.

There is no entry fee, and gardeners may enroll their produce by bringing it to the Floral Association Bldg. between 7 and 11 a.m. on the day of the show. Judging starts at 11, with doors open to the public from 1 to 6 p.m.

Skaters Open Membership

The joint CRA-ARA Ice Skating Club is now accepting new members from among GD/Astro, GD/Convair and GD/E employees and their families.

For a fee of $1 per family per year, the club offers weekly private skating sessions, free instruction, and reduced admission prices.

The group meets each Thursday at 6:30 p.m., Mission Valley Ice Plaza, and has exclusive use of the rink until 8 p.m. Members may continue to skate with the general public until 10 p.m. at no additional charge.

Up-coming special club activities will include a contest to design a club emblem, and a "Summer Weekend at Big Bear Lake" to be held in September.

Murray Bass Named To Rochester Post

Murray T. Bass has been appointed director of industrial relations for Stromberg-Carlson division of General Dynamics Corporation at Rochester, N. Y.

Bass succeeds Walter Black who has transferred to GD/Astronautics as chief of administrative analysis and operational control.

Formerly wage and salary administrator at Rochester, Bass previously had held various industrial relations posts at GD/Fort Worth. He joined the company at Fort Worth in 1954.

Radiation Shielding Course Offered

General Dynamics men interested in a ten-week course in radiation shielding to be given at General Atomic this fall by San Diego Section of the American Nuclear Society are asked to contact B. A. Engholm of General Atomic.

A tentative outline of weekly lectures includes such topics as nuclear radiation and its effects, elementary shielding analysis, neutron and gamma attenuation, application of machine methods to special problems in shielding, effect of shield design upon plant design, typical overall shield analysis and design.

An idea of the preferred day of the week, in order to make the scheduling most convenient to the majority, is needed from prospective attendees. Engholm may be reached at the General Atomic facility, Room TO-255.

Convair, Astro Set Salvage Schedule

Schedule at GD/Convair and GD/Astro salvage yards for the next four Saturdays is:

GD/Astro—July 27, Aug. 10.

GD/Convair—Aug. 3, 17.

Save Materials—Don't Throw Your Job Away

Relics of Past

Collection of Pins, Emblems Traces Long Convair History

History of General Dynamics/Convair division, and its antecedents, was traced through nearly 40 years by the pins, medals, and emblems gathered together for the CRA Coin Club's unique display which took second place at the San Diego County Fair.

Thirty-five present and former GD/Convair employees answered the call for specific items and information to make possible the exhibit. It proved one of the most popular numismatic exhibits at Del Mar, said John Barrett of GD/Electronics, club president, who headed the CRA Coin Club group manning the section on July 6.

George Stewart of GD/Convair Dept. 6, display chairman, spent weeks collecting the 87 different items and compiling the accompanying history from the time Consolidated Aircraft was founded by Maj. Reuben Fleet in 1923.

Included were service pins dating back to Sept. 18, 1939; two- and five-year pins from Vultee Aircraft; others from Consolidated Aircraft and Consolidated Vultee. Several old-timers donated their entire collection of personal service emblems which covered the entire range of years spent with Convair and its predecessors.

Pins commemorating first flights of specific planes included such rare specimens as ones marking the V-72 dive bomber; B-36, B-24, PBY-5 Catalina, PB2Y-3 patrol bomber (in the form of a locket), down through the gamut to the present-day 880 and 990 jet transports.

A pilot's pin from Consairways, transpacific airline operated during World War II, was shown. Later models were pins with diamond settings given to the six crew members of the first 880 and 990 flights and similar pins with gold "O"s which went, at the same time, to ground crews.

Two coin-type medals struck at Convair were on display. One, bearing a likeness of the F-106A, was made for the 1956 GD/Convair open house, and the other was a souvenir for the opening of Astronautics' Kearny Mesa plant in 1958. Both medals were made, one at a time, on a punch press at Plant 2. Fifteen thousand of each were turned out in aluminum and 12 of each kind in brass. One of the brass specimens was located for the CRA display.

Other unusual pins, long out of date, were of World War II vintage—those awarded for purchase of War Bonds and Savings Bonds; Army and Navy "E" for Excellence pins; and a Civil Defense Instructor's pin.

A gold letter seal used during 1953 to observe the company's 30th anniversary was shown. A lead proof coin, struck by GD/Convair's CRA for the Pomona division's coin club was another unique item.

Other pins and emblems were those connected with the company's Employee Suggestion and Cost Improvement Proposal programs; Consolidated and Convair Recreation Associations; Management Clubs; and other organizations, including the Vultee Masonic Lodge.

Many of the contributors have given their items to the Coin Club to keep for future displays, or perhaps, a permanent exhibit sometime in the future, said Stewart. And, if anyone noticed missing items which should fill in some of the gaps of history, he is urged to contact Stewart at any time, evenings, on his home phone, 277-8636.

A list of owners of items and information gathered for the display will be kept on file so that similar exhibits can be arranged with less research.

Winners Announced In Card Club Play

Frank Westphal and S. J. Johnson were north-south winners, and Mr. and Mrs. Wayne Evans, east-west, during ARA Bridge Club's regular play night, July 5.

The following week (July 12), two sections of play were arranged with Bob McNutt and Jerry Jaminet (N-S) and Gus Delaney and Eve Leasure (E-W) winning in section A.

Section B winners were Mr. and Mrs. C. A. Miller (N-S) and Francys Darr and Fredrica Combs (E-W).

The group plays each Friday at 7:30 p.m. in ARA Clubhouse.

Varig 990As Flying to L.A.

Varig Airlines began Convair 990A service to the United States last month with inaugural flights to Los Angeles from South America on June 12 and 28.

Two 990A jetliner trips are scheduled each week, arriving on Tuesdays and Fridays and departing from Los Angeles on Wednesdays and Saturdays.

Both flights originate at Buenos Aires, Argentina, with direct connections at Sao Paulo and Rio de Janeiro, Brazil. The Tuesday flight makes stops at Lima, Peru; Bogota, Colombia; Mexico City, and ends at Los Angeles. The Friday 990 schedule adds Panama City to the route.

Varig now is operating three of the Convair advanced version jetliners.



PRIZE WINNER—Holding trophy won by CRA Coin Club's entry in San Diego County Fair is John Barrett (right) of GD/Electronics, club president. At left is George Stewart, GD/Convair Dept. 6, who was in charge of display of Convair tokens and medals.



PRA PLAYGROUND—Youngsters of GD/Pomona employees can now enjoy latest designs in play equipment at recently opened playground in PRA recreation area. Named "Candy Cane City," playground includes Jack and Jill playhouse, swinging park benches, Toddle swing set, Trail Blazer slide and horses with chariot. Pictured are "flying ponies."

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome. Master Points night tonight (July 24).

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA meeting Aug. 7, 7:30 p.m., Floral Association Bldg., Balboa Park. Joint Summer Flower Show Aug. 11.

GOLF—Entries open tomorrow (July 25) to Aug. 2 for CRA tourney at Bonita Country Club, Aug. 10-11. Call ext. 1705, Plant 1.

GUN CLUB—Troy-type trapshoot this Friday (July 26), 7:30 p.m., Gillespie Field Range. Regular club shoot Aug. 4.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children, 25c.

PISTOL CLUB—Regular club shoot July 28, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (July 25), 8 p.m., Harbor Drive headquarters.

SOFTBALL — Plant league games Tuesdays and Thursdays, 6:45 and 8:20 p.m., John Adams Playground, 35th & Adams Sts.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Jack Loos, ext. 1437, Plant 1.

Williamson Winner In CRA Gun Match

Joe Williamson (Dept. 401) won both events at CRA Pistol Club's regular match July 14.

He took the .22-cal. Short National with 279 and the .22-cal. Police Course with a score of 291.

Ralph Picard of GD/Electronics stood second in the Short National, 269, and third in the Police Course, 280. Other Short National standings were: W. G. Walker (Dept. 6), third, 265 and four Xs to break a tie with Jim Halfacre (Dept. 140). Dale Young of Dept. 131 was next with 243.

Halfacre was second in Police Course competition with 284, followed by Picard, Walker and Young.

Sports & Recreation

Hi-Lows and GD/E Purchasing Lead 'Slow Pitch' Ball League

Hi-Lows and GD/E Purchasing were leading their leagues in the plant "slow pitch" softball tournament with four wins and a single loss at the close of July 16 games.

Hi-Lows topped National League standings and GD/E Purchasing, American League. Other National League team standings were: GD/E Material Control, 3-2; Accounting, 2-3; Material, 1-4.

Tool Store 25 and Fire Dept. both had 3-2 records in the American League. Fabrication had a blank, with no wins.

Last games results in the annual tourney saw GD/E Material Control winning over Accounting, 11-3, and Hi-Lows downing Material, 18-4, on June 27. In the Thursday (July 11) games Material took a tight one from GD/E Material Control, 5-4, and Hi-Lows beat Accounting, 20-9.

In American League games June 25, Tool Store 25 downed Fabrication, 5-0; Fire Dept. won from GD/E Purchasing, 12-11.

On July 9 Tool Store 25 won a 9-1 victory over Fire Dept. and GD/E Purchasing took a 11-5 game from Fabrication. The next Tuesday (July 16) Fire Dept. beat Fabrication, 13-7; and GD/E Purchasing defeated Tool Store 25, 5-3.

American League games are played Tuesday evenings and National League matches on Thursdays at John Adams Playground, 35th and Adams. Times are 6:45 and 8:20 p.m.

Baber Coin Display Wins First at Fair

Al Baber, long-time member of the CRA Coin Club and president of the San Diego Coin Club, won a first place for his individual coin display at the recent San Diego County Fair.

Baber's exhibit included complete sets of Lincoln pennies and Indian head pennies from 1857 to the present.



MISS POPULARITY — Gloria Seefus, GD/Pomona typist, holds trophy she won in recent Miss California pageant. Gloria was voted most popular girl by other contestants.

Fall Charm Courses Begin in September

GD/Convair and GD/Electronics ladies may once again spruce up for fall through charm courses sponsored by Industrial Recreational Council.

Edith Antelline, well-known charm school instructor who has conducted CRA courses for several years, will start basic classes Sept. 19 and 25. Discount rates to GD women are $13.50 for the basic course and $19.50 for the advanced course which follows.

Classes meet for a six-week period, once a week, in the House of Hospitality, Balboa Park, from 7 to 9 p.m.

Beginning course will cover good grooming, figure control, visual poise, make-up, hair styling, etiquette, attractive speech, wardrobe wisdom.

Registration forms are available at GD/Convair employee services. They are to be forwarded, with class fee, to Mrs. Antelline, 336 Eighth St., Del Mar, Calif.

CRA Radio Hams Join In Annual Field Day

CRA Radio Club members, who helped man the club's station during annual Field Day late last month, included Don Bain (WA-6MRE), Nick Callas (K6DBJ), L. D. Rush (K6QXN), George Spanovich (WA6ZRX), Paul Frank (K6ROQ).

These men spent the 24-hour period over Saturday and Sunday, June 22-23, at Pine Crest, the CRA recreation area near Julian, to keep the emergency station in operation. This was the second year Field Day was conducted at the mountain site.

Commissioner Jim Lack expresses his appreciation for the time and effort expended by club members during the exercise.

Reiter, Kuntz Low in Golf

Al Reiter and Norm Kuntz, both Dept. 115, were first and second low gross winners at the July 6-7 CRA golf tourney held at Coronado.

Reiter shot a 74 and Kuntz followed with an 80.

Low net winners in the 0-15 flight were Ken Eastin (Dept. 6), first with 66, and Ralph Way (Dept. 400), 69.

In the 16-22 flight, John Evans (Dept. 25) was first low gross, 82; Bob Fagan (Dept. 6), second, 83.

First low net was G. Watson (Dept. 400), 65; second, C. Shyler (Dept. 48), 66.

Ed Hansard (Dept. 6) was low gross winner in the 23-and-over flight with a 93. C. Stafford (Dept. 400) had second low gross of 95.

First low net went to A. Van Horn (Dept. 400) who had a 66. John Woods (Dept. 14) came in second with a 72.

Floral Entries Win at Fair

Floral arrangements entered by a General Dynamics couple in the San Diego County Fair won top honors on practically every entry day.

Esther Barksdale of GD/Convair Dept. 15 and her husband, Madsen Barksdale of GD/Electronics cost accounting, had about 40 of their arrangements on display throughout the run of the fair.

Esther took blue ribbons for four and Barksdale for three of his own making. Each had to carry out an assigned theme. Winners included a bouquet of red roses arranged to depict a popular song, in this case, "Top Ten"; "California Luau," of flowers, fruits, and vegetables; "Salute to Summer"; "America," a red, white, and blue floral arrangement observing the Fourth of July.

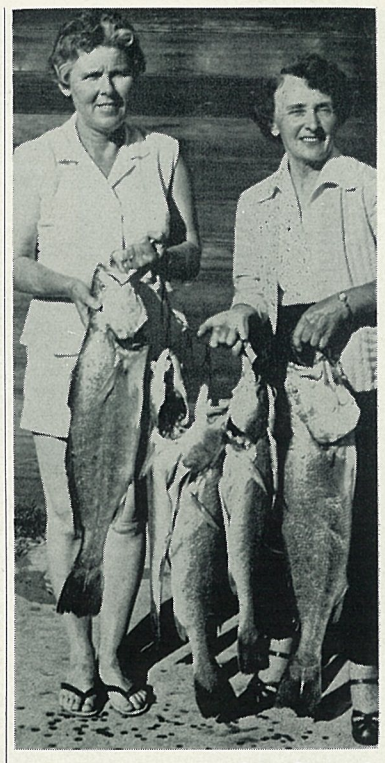
Barksdale's winners, all entered in the men's division, were "Memorial Day," for a holiday theme; "Stag Party"; and "Fireworks," on the Fourth.

In addition, Esther won a first for her single bloom garnet rose, and the husband and wife gardening team took home nine seconds and two thirds.

Phil Kessel Named Aeromodeler Prexy

Phil Kessel of GD/Convair Dept. 6 is new president of the CRA Aeromodelers group. He succeeds Larry Peterson, who has resigned from the company, said Commissioner Don Larsen.

All GD/Convair, GD/Electronics modelers are urged to join in the weekend flying sessions held Saturday and Sunday mornings, 8 a.m. to 1 p.m., at the Clairemont Mesa Flying Site, off Highway 395.



BIG CATCH — GD/Convair wife, Mrs. Gunnard Peterson (right), had to call on help from Ruth Menzie, wife of CRA Fishing Club Commissioner Bob Menzie, to hold up her corvina caught on one of first times out.—Photo by Gordon Menzie.

Anglers Report Heavy Catches

Fishermen at GD/Convair and GD/Electronics will have to turn in some big catches this month if they hope to beat out the competition for the July fishing awards.

They will have to top the big ones already entered by Mrs. Gunnard Peterson (husband in Dept. 131), a new victim of the angling fever. She hauled in her limit of six corvina, weighing 8 to 12 lbs., on one of her first tries at fishing in Salton Sea. Her largest fish was the first entry in the current month's contest.

Ara Toon of Dept. 16-6 won top prize of $10 in the June contest with a 19-inch rainbow trout caught at Lake Murray. A. J. Pommier (Dept. 48) took second-prize money of $5 for a 14-inch rainbow, also hooked at Lake Murray.

Honorable mention went to Mike Clark (Dept. 3-8) for a 16-lb., 6-oz. yellowtail caught on a sportfishing trip off La Jolla and Guy Himes, retired from Dept. 25, for his halibut, 9½ lbs., caught in San Diego Bay.

August Golf Sweeps To Be at Bonita CC

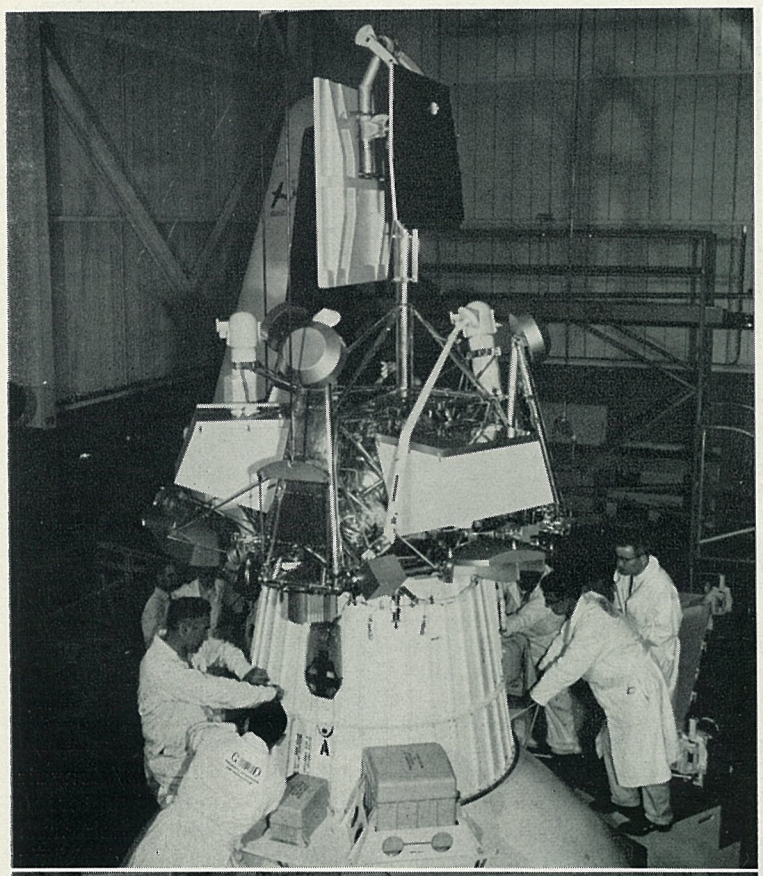
Entries open tomorrow (July 25) for the August CRA links tourney, said Commissioner Ken Wulfemeyer.

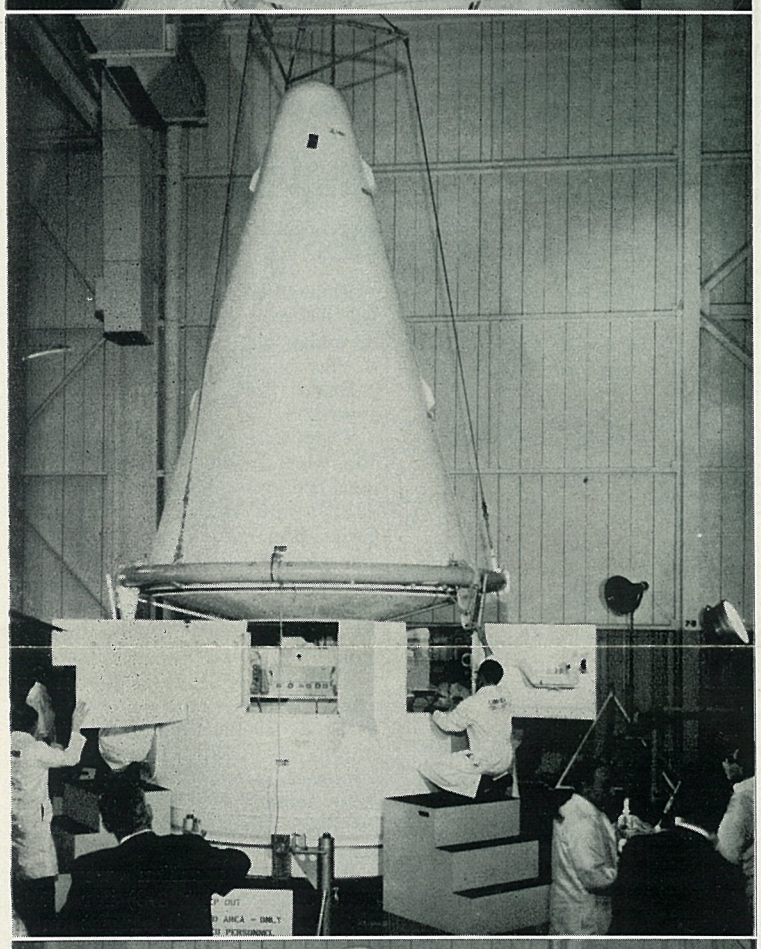
Starting times will be given GD/Convair and GD/Electronics golfers through Aug. 2 if they call ext. 1705, Plant 1.

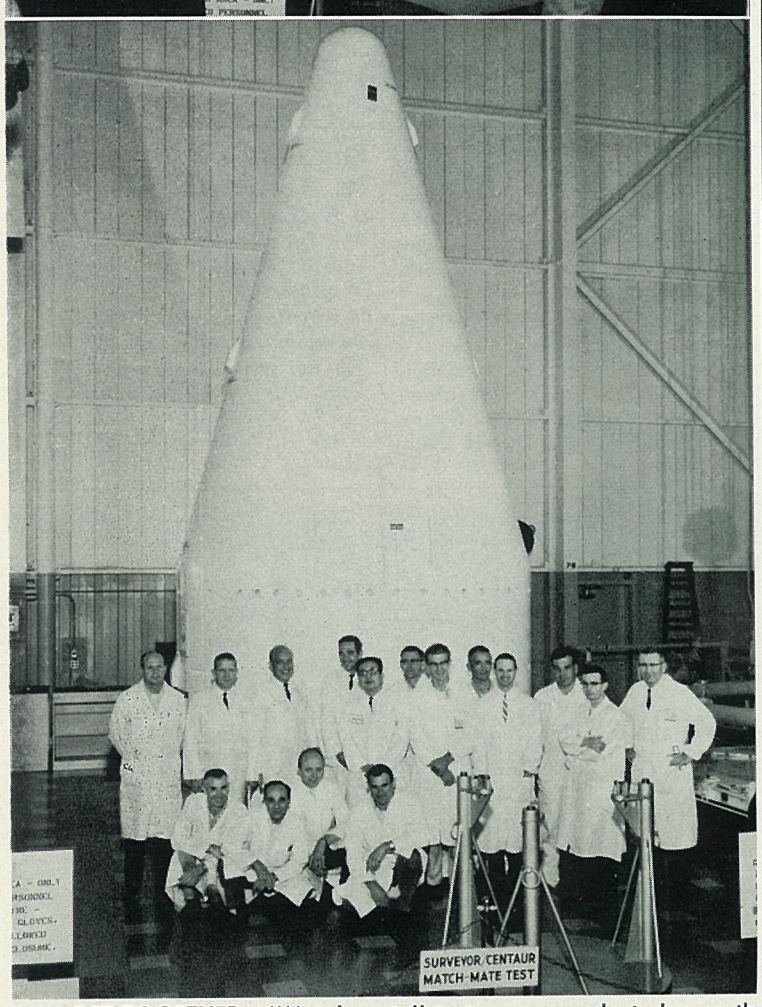
The tournament will be held Aug. 10 and 11 at Bonita Country Club.



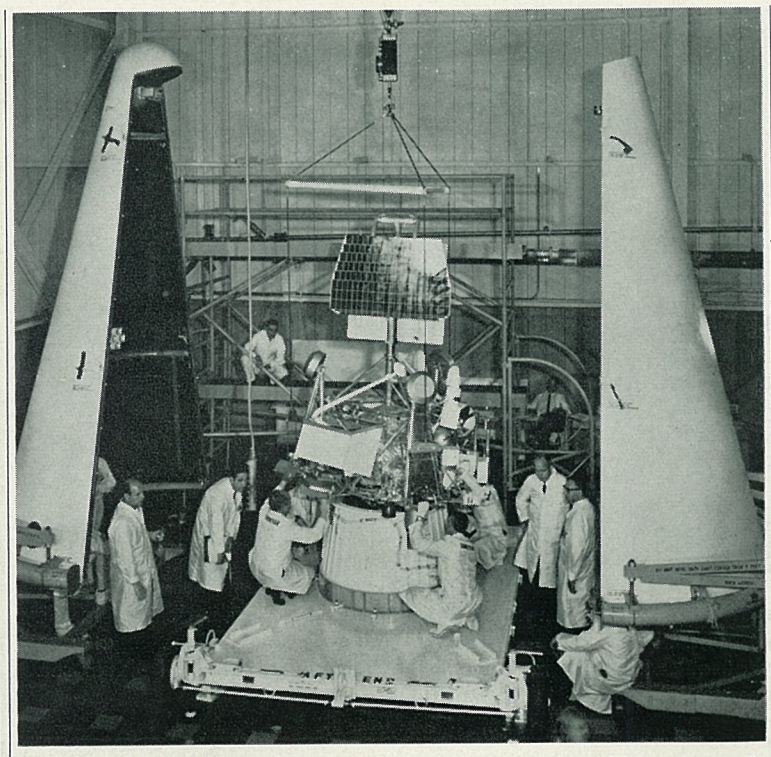
NEW SLATE — Newly-installed officers of CRA Road Runners, GD/Convair and GD/E trailer group, are: front row (from left), Regina Wawrzynski, secretary-treasurer; Carl Scholl, president; CRA Commissioner Ralph East; Loretta Devin, vice president. In back row, from left, are judicial board members Chuck Risner, Ivar Peterson, and teen-age representatives, Carol Perkins and Tom Hurley.







GET TOGETHER—"Match-mate" tests were conducted recently at Hughes Aircraft, El Segundo, Calif., when Surveyor and Centaur were brought together. In top photo, GD/Astro's Dick Jones, Don Prey, Pat Cole, Joe Hoffman, Bill Wilkerson, Svend Nilsson, Tom Fitzpatrick check fit. In center photo panel is opened for checking accessibility of electronics packages, air conditioning ducts, etc. Nose assembly that encapsulates Surveyor is built at GD/Fort Worth. Hughes Aircraft builds Surveyor; GD/Astronautics produces Centaur.



CAPSULED—Nose fairings are mounted on assembly cart ready to roll, encapsulating Surveyor. Note light reflecting from spacecraft's solar panels.

Centaur and Surveyor Joined in 'Match-Mate'

Centaur and Surveyor got together for the first time recently for a series of "match-mate" tests.

Those associated with the month-long program involving the moon-probing combination proclaimed the two to be "perfectly mated."

Beforehand, the operation was likened to threading a needle—blindfolded! That is, the mating of a sophisticated electronic spacecraft (Surveyor) to its launch vehicle (Centaur) can lead to trouble if there is the slightest variance.

Too, the three major components involved had been built at three different locations.

Hughes Aircraft builds Surveyor. General Dynamics/Astronautics produces both the Atlas first stage and Centaur second stage launch vehicles. General Dynamics/Fort Worth, under contract to Astro, turns out the honeycomb fiber glass nose fairing assembly that encapsulates Surveyor and the Centaur forward bulkhead.

Match-mate tests were performed at Hughes' El Segundo, Calif., plant.

They were conducted to verify the design, alignment, accessibility and compatibility of the prototype equipment involved and to simulate a journey from the spacecraft assembly area to launch pad. There were 13 major test objectives in all. Technicians from Astronautics, Hughes and NASA performed the tests.

"The joint efforts of various Astronautics' design, fabrication, testing and support groups were responsible for the excellent hardware used in these tests," said Bob Benzwi, chief of payload integration-Centaur.

"In addition, the on-schedule completion of this program clearly demonstrated that two major organizations (Astro and Hughes) can jointly conduct critical technical operation when thoughtful management planning has been employed," he added.

Astronautics assembled a team of specialists for the job under Jack Fischer Jr., project engineer. Tom Fitzpatrick was test conductor, while Carl Miner represented Astro's NASA office. Team members included Dick Jones, airborne design; Bruce Warren, ground handling equipment; technicians Bill Wilkerson, Joe Hoffman, Svend Nilsson and Pat Cole; Don Prey, test support; and Lee Stouse, quality control. All are from Centaur project organizations.

Many groups and departments contributed to the effort. For instance, ground handling equipment ranging from complicated dual torus assembly carts to nose cone support rings were built by tooling to Astro design. Manufacturing operations built a "hard" mockup of the Centaur forward bulkhead and provided flight-type adapters. Other groups supplied technical help as needed.

"Every item we shipped to Hughes performed satisfactorily, a direct tribute to the skills responsible for them," Benzwi said. "In fact, there were no delays of any type due to Astronautics-produced components, a key factor in meeting test schedules."

Prior to forwarding the test components to Hughes, Astro team members checked compatability of all equipment in functional tests at Plant 19.

Fitzpatrick indicated that Plant 19 checkouts made it possible to iron out minor problems well in advance and to acquaint team members with their tasks.

Components were assembled until three major subassembly units were complete: mated nose fairings, the spacecraft and the forward bulkhead.

The forward bulkhead mockup was fitted with the aft adapter, then surrounded by the lower portions of the nose fairings, called barrel sections.

The matched nose fairing conical sections were fitted into the torus assembly and mounted on wheeled carts for ease of handling. These pincherlike torus half rings, when brought together, form the major support for the encapsulated Surveyor.

Surveyor was mounted atop the Centaur forward adapter which was fitted atop a special transport trailer.

For assembly the fairing halves were brought together, attached, and the torus assembly bolted together, making a snug nest. This entire combination was lifted and fitted atop the Centaur bulkhead assembly.

Officials from NASA's Lewis Research Center and Jet Propulsion Laboratory personnel viewed the tests from time to time. All were elated over the entire program.

Surveyor Job To 'Feel' Moon

Before man can journey to the moon he must know quite a bit more about the voyage involved and the lunar surface itself. This, in brief, is the mission of the Atlas/Centaur-launched Surveyor spacecraft.

The Surveyor program mission is threefold: to provide lunar astronauts with a foreknowledge of conditions essential to their safe landing and return; to develop techniques in control, guidance, communication and landing required for a successful manned voyage; and to obtain basic scientific data about the moon.

Jet Propulsion Laboratory is manager of the Surveyor program for the National Aeronautics and Space Administration.

Surveyor spacecraft will weigh approximately a ton at launch. It will require about 66 hours for the voyage from Cape Canaveral launch pads to the surface of the moon where it will soft-land.

Atlas will provide initial propulsion to carry both Centaur and Surveyor out into space, then separate. Centaur engines will ignite and position Centaur in a 100-mile-altitude "parking orbit" for a brief period before striking out on the journey to the moon. On command, Surveyor will separate from Centaur and proceed alone, "navigating" by fixes on the sun and Canopus, one of the brightest stars. When descending to the moon's surface, Surveyor will be slowed to about 6 mph by retrorocket power.

Three television cameras will relay pictures to the earth. Instruments will collect lunar soil samples and make geo-chemical analyses, "feel" the lunar surface to assess its physical properties and measure radiation and particle fields of the moon's atmosphere.

Camera Added To S-C 4020

Versatility of the S-C 4020 system now is available with interchangeable 16mm or 35mm recording cameras. First firm to use the new 16mm camera with its S-C 4020 is Martin-Marietta Co. of Denver, Colo.

Using the 16mm camera, output from the recorder is compatible with existing information storage and retrieval systems. The smaller film size reduces film costs while reducing image size less than 10 per cent from that of 35mm film.

Function of the camera in the S-C 4020 is to record computer data presented on a special cathode ray tube at speeds consistent with today's large-scale computers. Output from the recorder also can be printed out directly on photo-recording paper.

In addition to recording alphanumeric printing from the computer, the S-C 4020 converts computer language into combinations of curves, graphs, and drawings for easier understanding by users.



"I just can't take it any longer . . . getting up in the darkness . . . running for my car pool . . . grabbing what I think is my lunch bucket . . ."

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 16 | PUBLISHED BY GENERAL DYNAMICS CORPORATION | Wednesday, August 7, 1963

Roger Lewis Reports First Half Results

(Following is the text of President Roger Lewis' letter to share owners which was part of General Dynamics' semi-annual financial report.)

TO THE SHARE OWNERS:

At this mid-point in 1963, I am happy to report that General Dynamics Corporation has largely recovered from the serious losses of recent years. The trend toward improved profitability indicated by the results of the year 1962 has continued during the current year.

For the three months and six months ended June 30, 1963, these highlights are significant:

- **Earnings**

For the quarter ended June 30, 1963, consolidated net income was $17,430,983, equivalent to $1.74 per common share outstanding. This represents an increase of approximately 44% over the $12,108,221 of net income, or $1.22 per share, reported for the comparable period of 1962.

Net income for the six months ended June 30, 1963, was $26,034,776, or $2.60 per share, an increase of approximately 14% over the first half of the prior year.

The earnings of the Corporation for the first half of 1963 and the year 1962 were not subject to United States income taxes as a result of carrying forward the unused portion of the 1961 loss. Without this loss carry forward, consolidated net income would have approximated $14.5 million for the first six months of 1963 and $12.0 million for the first half of 1962.

Tighter controls have been introduced over the past year which have resulted both in increased earnings for the Corporation and in lower over-all cost to our customers. The ratio of pre-tax profit to sales has improved from 2.3% in the first half of last year to 4.0% for the latest six-month period.

The jet transport program is approaching completion. Total costs and revenues will not be determined before the end of this year. We believe, however, that cost reductions and performance achievements realized will enable us to reduce the loss on the program below the amounts provided in prior years.

- **Debt Reduction**

Short-term bank loans for the Corporation, which were at a peak of $187 million in February, 1962, had been reduced to $90 million by year end. Since then, in spite of an additional $15 million requirement to finance the repurchase of six Convair 880 jet transports which have been under lease by Northeast Airlines, all short-term bank loans were completely paid off by July 1, 1963.

At that date, General Dynamics Corporation had no short-term bank debt outstanding for the first time since 1955.

In the first half of this year, long-term debt was also reduced by $4 million, and at June 30, 1963, long-term debt stood at $144 million.

- **Sales**

Sales for the three months ended June 30, 1963, were $356,516,844. For the first six months of 1963, sales totalled $706,178,874. This substantial decline from the $1,057,395,704 volume in the first half of the previous year is due almost entirely to the completion of both the B-58 bomber program and the Atlas base construction program in 1962. Because newer programs have not yet reached important production levels, sales volume for the full year of 1963 is expected to continue at the approximate rate set in the first six-month period.

A satisfactory flow of new business is maintaining our backlog of orders, including both those funded and those expected to be funded or negotiated as part of authorized government programs, at approximately the $2 billion level.

- **Programs**

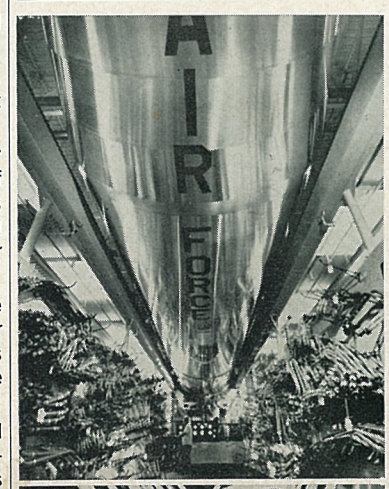
Research and development of the F-111 (TFX) bi-service fighter-bomber is progressing on schedule in accordance with the letter contract of December, 1962. Subcontracts have been let to eleven other industrial companies for major components of this advanced weapon system. At the end of June, several thousand persons across the country, in the plants of General Dynamics, its associate contractors and its subcontractors, were working on this program.

The Project Mercury orbital manned flight program of the National Aeronautics and Space Administration was completed with the 22-orbit flight of Major Gordon Cooper in May. In this crucial program, Atlas again demonstrated its reliability with a 100% record in launching America's astronauts into orbital flight. The latest version in the continuing family of Atlas boosters, the SLV-3 (standard space launch vehicle) is in production and is already scheduled for more than 30 launches for space research programs of the United States Air Force and the National Aeronautics and Space Administration.

Arrangements have been made with Northeast Airlines for the return of six Convair 880's which have been under lease to that carrier. Active negotiations are under way for the sale of these aircraft.

The plant of our Electro Dynamic division, at Bayonne, N.J., was totally destroyed by fire in early April. The damage was covered by both property and business interruption insurance and Electro Dynamic has recently acquired new and improved facilities at Avenel, N. J. During the intervening period, through the extraordinary cooperation of employees, suppliers and major customers, including the United States Navy, commitments to customers were met on schedule.

The accelerating pace of the nation's submarine program was reflected during the latest quarter by the launching of three submarines at Electric Boat division and the commissioning of two others built there.



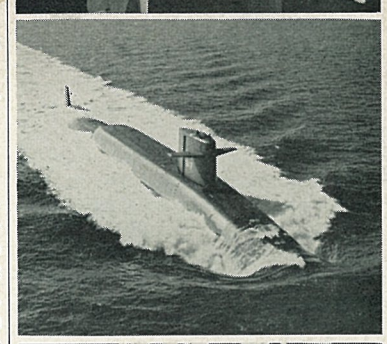
July 25, 1963

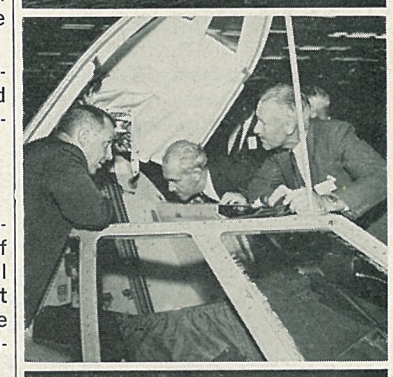
Roger Lewis, President



Roger Lewis, president of General Dynamics Corporation.









Photos, from top down: Atlas, tried and true, 100% reliable in launching astronauts; key men in Surveyor program huddle (Ben Milwitsky of NASA, W. E. Giberson and Lloyd Blomeyer of JPL, Bob Benzwi and Bob Korte of GD/Astronautics) while checking progress reports on program which will use Atlas/Centaur; Electric Boat-built Polaris submarine Alexander Hamilton was commissioned June 27; Air Marshal Sir Valston E. Hancock of Australia, right, is briefed on B-58 by General Dynamics' A. S. Witchell, left, during visit to GD/Fort Worth for discussions on F-111 tactical fighter; Canadair's swing-tail CL-44 transport, on display at Paris Air Show.

Dynamics' Net Income Climbs

Consolidated net income of General Dynamics Corporation for the first six months of 1963 was $26,034,776 or $2.60 per share, an increase of approximately 14% over net income of $22,844,417 or $2.29 per share for the same period last year, Roger Lewis, president, reported to shareholders last month.

Lewis said that earnings for the quarter ended June 30, 1963, amounted to $17,430,983, equivalent to $1.74 per common share outstanding. During the second quarter of 1962, General Dynamics' net income was $12,108,221 or $1.22 per share.

The company's earnings for the first half of 1963 and the year 1962 were not subject to United States income taxes as a result of carrying forward the unused portion of the loss recorded in 1961. Without the loss carry forward, consolidated net income would have approximated $14.5 million for the first six months of 1963 and $12.0 million for the first half of 1962.

Lewis said that tighter controls introduced during the past year "have resulted both in increased earnings for the Corporation and in lower over-all cost to our customers. The ratio of pre-tax profit to sales has improved from 2.3% in the first half of last year to 4.0% for the latest six-month period."

Although total costs and revenues from General Dynamics' jet transport program will not be determined before the end of this year, Lewis said, the company believes that "cost reductions and performance achievements realized will enable us to reduce the loss on the program below the amounts provided in prior years."

As of July 1, the company had no short-term debt outstanding for the first time since 1955.

The company's short-term bank loans, which were at a peak of $187 million in February, 1962, had been reduced to $90 million by the end of 1962. By the July 1 date, all short-term bank loans were completely paid off, in spite of an additional $15 million requirement to finance the repurchase of six Convair 880 transports which have been under lease by Northeast Airlines.

In the first half of 1963, long-term debt was also reduced by $4 million, standing at $144 million on June 30.

Sales for the three months ended June 30, 1963, were $356,516,844. For the first six months of 1963 sales totalled $706,178,874. The substantial decline from the $1,057,395,704 volume in the first half of 1962 was due almost entirely to the completion during 1962 of both the B-58 bomber program and the Atlas base construction program. Because newer programs have not yet reached important production levels, Lewis said, sales volume for the full year is expected to continue at the approximate rate set in the first six months.

The company's backlog, including orders funded or expected to be funded or negotiated as part of authorized government programs, is being maintained at approximately the $2 billion level.

★ ★ ★

Other news developments highlighted in the mid-year General Dynamics report to shareholders included:

Selection of General Dynamics as one of three firms awarded design study contracts for a piloted space vehicle which would take off from a ground base, maneuver in outer space and return to earth for a conventional landing. Designated the "aerospace plane," it would operate initially 300 to 500 miles from

(Continued on Page 2)

Little Joe II On Launch Pad

Little Joe II launch vehicle, built at GD/Convair for the Apollo Program, received go-ahead for first flight last week.

It was moved onto the launch pad at White Sands Missile Range, N. M., on Aug. 2, reported J. B. Hurt, GD/Convair program manager.

Preparations now are under way for firing the last week in August. This will be the first significant firing in the Apollo Program, Hurt said, since the launch of Little Joe II has been moved ahead of the North American Aviation pad abort test.

On site during readying activities is Harold Cheney, GD/Convair deputy program manager with launch operations responsibility, together with other GD/Convair personnel.

Garuda Airways Key Personnel Given Intensive 990A Training

Key personnel from Garuda Indonesian Airways now are in the midst of production flight and customer service training courses on the 990A jet transport at General Dynamics/Convair's San Diego plant.

First flight crew, headed by Captain Partono, Garuda Airways president, reported last week for the production flight five-week ground school, while 16 Garuda supervisors and engineers arrived July 22 for a six-week maintenance training course.

The flight personnel, including three pilots, two flight engineers, and a Department of Civil Aviation pilot, began production flight ground school training on July 29.

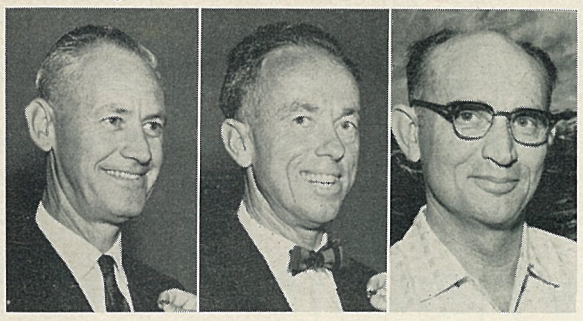
They will become acquainted with the 990A's operational systems, performance, and flight characteristics in the five-week training period, directed by P. H. Selby, flight training supervisor. Each also will be checked out in the cockpit procedures trainer.

Following conclusion of the course on Sept. 2, the Indonesian flight crewmen will spend about two weeks in flight transition training on Garuda's first 990A and will return to Djakarta on the first ferry flight the latter part of September.

Coordinating arrangements for the Indonesian pilots and flight engineers is Sumedi Amir, captain and deputy vice president of operations. Others are R. M. Sjafei, captain and chief of training department; Azwar Apin, chief flight engineer; and Artijoso, flight engineer instructor. Department of Civil Aviation pilot

(Continued on Page 2)

Log Book Entries



Wearing new 25-year service emblems at GD/Convair are, from left, P. R. Willoughby Jr., Dept. 42, G. W. Allen, Dept. 401, and C. E. Hall, Dept. 131.

Service Emblems

SAN DIEGO

Service emblems due during the period Aug. 1 through Aug. 15.

Twenty-five-year: Dept. 6-0, M. C. Tombler; Dept. 128, J. L. Killeaney; Dept. 140, T. F. Calvert; Dept. 141, R. E. Pendarvis.

Twenty-year: Dept. 16-1, R. C. Bailey Jr.; Dept. 42-1, D. L. Sanders; Dept. 141, A. W. Young.

Fifteen-year: Dept. 14-4, A. J. Barry, Doris H. Reagan; Dept. 23-3, Terry Kell; Dept. 25-5, E. M. Perez.

Ten-year: Dept. 6, J. E. Dodge, W. H. Jackson; Dept. 14-4, L. J. Tennity; Dept. 16, Doris T. Mondaca, G. W. Suydam; Dept. 23-3, F. E. Westphal; Dept. 25, Newton Meeks, C. A. Zanoska; Dept. 42-3, J. R. Munson; Dept. 91-1, Bette J. Clancy.

GD/ELECTRONICS

Ten-year: Dept. 10-00, E. L. Wright; Dept. 33-00, Rudolph DiBella; Dept. 71-00, H. E. Baldwin.

Retirements

CONVAIR

ADAMS—Samuel G., Dept. 97-3. Seniority date Jan. 26, 1942, retirement effective July 22, 1963.

BROWN—Cyril P., Dept. 25-5. Seniority date Dec. 5, 1950, retirement effective Oct. 1, 1962.

BURNS—Martha O., Dept. 44-3. Seniority date Jan. 16, 1952, retirement effective May 17, 1963.

CHRISTENSEN — Helen H., Dept. 292-5 Seniority date April 9, 1952, retirement effective July 31, 1963.

DILLINGHAM — Florence F., Dept. 171. Seniority date Aug. 10, 1949, retirement effective July 14, 1963.

FERRELL—Rosa M., Dept. 201. Seniority date Jan. 21, 1952, retirement effective July 18, 1963.

LETCHER—William M., Dept. 160. Seniority date Oct. 8, 1956, retirement effective July 15, 1963.

MOLER—Charles I., Dept. 21-2. Seniority date Nov. 15, 1950, retirement effective July 11, 1963.

ODEN—William D., Dept. 110. Seniority date May 9, 1952, retirement effective Aug. 14, 1962.

ROWELL—Lorne E., Dept. 101. Seniority date Nov. 5, 1947, retirement effective June 23, 1963.

SCHLAGENHAUF—Wesley M., Dept. 140. Seniority date Oct. 21, 1931, retirement effective July 15, 1963.

SMITH—Arthur J., Dept. 3-7. Seniority date Sept. 22, 1950, retirement effective July 5, 1963.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending July 19 and July 26.

Dept. 14, Doris H. Reagan, $20; D. E. Sundstrom, $31.20.

Dept. 15, W. J. Bullock, $100, partial payment.

Dept. 48, R. J. Harris, $15.

Dept. 91, M. B. Showers, $33.20.

Dept. 101, L. Budzynski and H. M. Woodard, joint award, $250.60 each.

Dept. 102, A. Stieringer, $27.60.

Dept. 115, F. S. Hall, $15; L. F. Stephens, $15; E. W. Carter and A. Reiter, joint award, $5 each.

Dept. 119, L. O. Smith Sr., $15.

Dept. 128, H. T. Cabral, $10.

Dept. 129, B. F. Armas, $10.

Dept. 171, H. C. Killgore and C. H. McCullough, joint award, $35.20 each.

Cost Improvement Proposals for same periods.

Dept. 93, K. H. Bruner.

Dept. 131, W. Martin, A. B. Oberg.

Deaths

CONVAIR

BRANDVIG—Lawrence C., Dept. 48-90, died July 18. Survived by wife, Helena; son, Clifton; daughter, Alice; four sisters and a brother.

GALEA—Vincent, Dept. 99, died July 20. Survived by wife, Kuza, mother, four brothers and a sister.

Personals

CONVAIR

We wish to express our appreciation to Convair friends for the flowers and cards of sympathy received at the death of James P. Sharkey.

The Sharkey family

Rider-Driver

CONVAIR

RIDE WANTED—from east section of city of El Cajon to Rose Canyon, 7:30 to 4 p.m. Leone Taylor, home phone, 442-7833, or ext. 2111 at Rose Canyon.

RIDE WANTED—from Broadway & K, Chula Vista to Plant 1, 7 a.m. to 3:30 p.m. Lupe Ashook, home phone 427-1381, or plant ext. 591.

Three Depts. Tie In Housekeeping

Three GD/Convair departments were tied in good housekeeping and safety standings at the end of the first two quarters of the annual contest.

Material, tool manufacturing, and manufacturing control were in the lead as of June 30, said M. C. Val Dez, in charge of safety activities.

Tool manufacturing had a perfect record in safety inspections during the first six months and one perfect mark for good housekeeping. Material and manufacturing each had five top marks in safety inspections and two in housekeeping.

Tied in second place were experimental and plant engineering with two good housekeeping wins and four for safety.

GD/Electronics fabrication and assembly had two clean slates for good housekeeping and two for safety.

Violation percentages rose from the first quarter average of .185 to .201 in the second quarter, based on employment.

Travel Reservation Office Is Relocated

GD/Convair travel reservations is now relocated on the second floor of Bldg. 5.

It had been headquartered in Bldg. 16 employment building until the recent move for easier accessibility for the division's engineering personnel.

The office, in charge of Dorothy Luscomb, is in Room 205, along the extreme north hall across from procurement planning section. Extensions remain the same. They are 2600 or 2611.

SD Engineer Named Reserve Unit's CO

J. T. Viele, GD/Convair test engineer, assumed new Naval Reserve duties July 20 as commanding officer of Naval Weapons Training Unit 778, North Island Naval Air Station.

Viele, commander in the Naval Reserve, was the unit's former executive officer. The unit is composed of officers from the San Diego area with extensive backgrounds in naval weapons functions who meet once a month to train in their individual mobilization assignments.

General Dynamics NEWS

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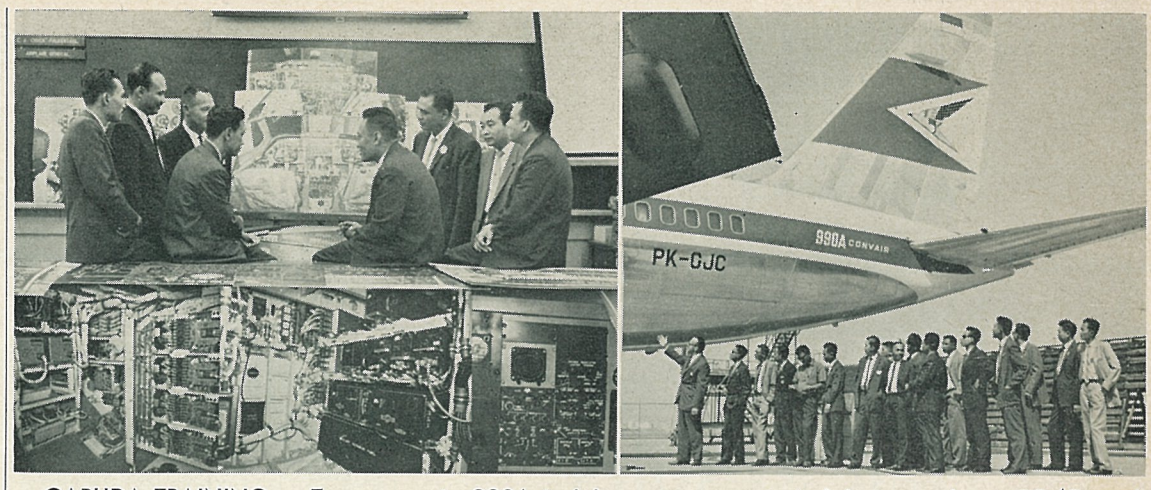
GD/Electronics (San Diego) news contact: Helen Wood, 298-4641, ext. 1377, Plant 1, Bldg. 51.

Fort Worth Editorial Offices, Col. 72, Adm. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and Stromberg-Carlson, editorial offices, 100 Carlson Road, HUbbard 2-2200, ext. 2555. Norman Howden, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.



GARUDA TRAINING — Two separate 990A training programs started last month at GD/Convair for key personnel from Garuda Airways of Indonesia. At left is first flight group in San Diego for ground school: R. M. Sjafei, Sumedi Amir, C. J. Falkenthal, GD/Convair instructor, Susatyo of DCA, Azwar Apin, Captain Partono, Garuda president, J. Thetekdjoe, resident representative, Artijoso. At right is group of Indonesian engineers and supervisors with customer service instructor, Bill Anthony, now in six-week maintenance training course.

Garuda Airways Key Personnel Given Intensive 990A Training

(Continued from Page 1)

covering operations is Susatyo.

Instructing the aircraft classes at GD/Convair are Ludy Knudsen, C. J. Falkenthal, and J. J. Coil. They will teach two ground school courses at the San Diego plant, with a second Indonesian flight group due to enter the training Sept. 20. Then, the GD/Convair trio will go to Djakarta to instruct two more of the five-week ground schools and remain in Indonesia until early next year to assist with transition training as the 990As go into service.

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The larger group of Garuda supervisors and engineers are now in their third week of a six-week maintenance training course under direction of customer service. They will complete the four standard classes in line and power plant, electrical, electronics, systems and structures, said R. K. Hall, in charge of the customer service training program.

All previously had completed the first phase of maintenance training at Djakarta, Indonesia, under direction of GD/Convair field service representatives. Customer service instructors of the current program are Bill Anthony, Charles Kurtz, W. F. Ashmore, Court Zeiss.

Three of the group, Hariadi Soedjono of the Indonesian Department of Civil Aviation, Bachtari Hasan and Soebowo, engine specialists, were scheduled to attend the General Electric Co.'s Engine School at Evendale, Ohio, after the line and power plant class. From there they will go to a major operating base to see practical application of information received at the school.

The rest of the Indonesian contingent will inspect GD/Convair factory operations on Garuda's 990As, then remain in San Diego to gain firsthand experience on the airplane during the pilot training program.

They will then return to Djakarta to participate in introduction of Garuda's 990As into Southeastern Asia service.

Besides the three already named, others at San Diego are Sutrisno, also of the Department of Civil Aviation; Subarjo; Marcus Pattinana, Sarosa, Zainul Bahri, Tjeng Biauw Liat, Suparjadi, Moerdianto, Lie Kim Gan, Sugihardjo, Wirjono, Dudung, Sunadi.

J. Thetekdjoe, resident representative at GD/Convair, is coordinating activities of Indonesian groups during their San Diego stays.

CIP, ES Savings Reach $400,736 So Far in '63

GD/Convair savers had 146 CIPs and ESs approved by the middle of last month to save the division $400,736 so far this year.

This amount is over half of the $733,000 savings target through Employee Suggestions and Cost Improvement Proposals, said Vic Janusz, Resources Economics coordinator in charge of the cost reduction program.

Altogether, 296 ESs and 105 CIPs were submitted with 108 ESs and 38 CIPs approved. CIP savings amounted to $358,461 and ESs accounted for $42,275 of the total.

Four men had established their eligibility for the 1963 President's Award with their CIPs of $25,000 or over, and two more were close to the mark.

Eligible candidates are H. A. Mohr and H. M. Woodard, both Dept. 101, joint CIP, $123,063; E. V. Torp, Dept. 91, $131,784; K. K. Verseckes, $27,399. The two within range of qualifying are H. B. Day, Dept. 16, $23,727, and R. L. Ingraham, Dept. 42, $16,918.

Dynamics' Net Income Climbs Over Earnings of Year Ago

(Continued from Page 1)

earth and later achieve orbits as far as 1,000 miles out.

* * *

The Corporation College Recruiting Program for 1963 was eminently successful, particularly in the area of engineering and science. Over 950 new graduates already have accepted offers and more than 1,000, many with advanced degrees, are expected to join divisions of the Corporation this year.

* * *

The governments of Canada and Great Britain announced agreement to undertake a research and development program on an unmanned short range surveillance and target acquisition system. Canadair Limited originally proposed the system and will build prototype versions. Designated CL-89, the drone will be designed to send back television pictures of enemy targets and take its own reconnaissance photos. The United States will assist by providing firing range facilities and technical support.

* * *

Astronautics and Electric Boat divisions will combine capabilities in designing and developing an advanced four-man life support system which could be used on space journeys lasting as long as six months. The cooperative effort is the result of a NASA contract awarded to Astronautics. **(GD/NEWS, June 26, 1963.)**

SUSAN JOHNSON WEDS DON BATES

Wedding bells rang July 5 for GD/Astro employee Susan A. Johnson, Dept. 596, who became the wife of Donald R. Bates, Centaur design analysis (Dept. 966-5).

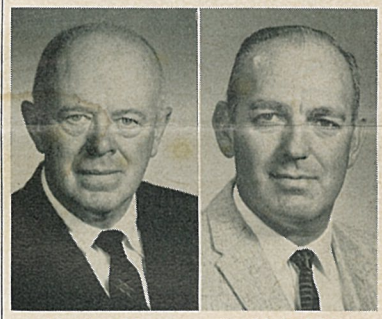
GD/E Marketing Posts Filled

Two new appointments announced last month within the marketing area of General Dynamics/Electronics at San Diego are John N. Mac Innes as requirements engineer-Navy and Marine Corps, and A. David Melvin as requirements engineer-Army, according to J. W. Colvin, manager of plans and programs.

Both Mac Innes and Melvin report directly to J. G. Melvin, GD/E manager of government requirements.

Mac Innes retired from active duty with the U. S. Naval Reserve with the rank of captain early this year.

He comes to his new position at GD/Electronics from Ryan Aeronautical Co.'s Aerospace Division, San Diego, where he had been in the marketing and market analysis field the last nine years.



J. N. Mac Innes David Melvin

Melvin was a lieutenant colonel in the Signal Corps, U. S. Army Reserve at the time of his retirement in 1959 after 20 years of service.

Since then he has held positions as sales engineer for Collins Radio Co. of Cedar Rapids, Iowa; electrical engineer with Pan American World Airways; and for the last two years, supervisor with Bell Aerosystems Co. at Tucson, Ariz.

He was born in Aberdeen, N. C., and attended Louisburg College, N. C., and the University of Arizona.

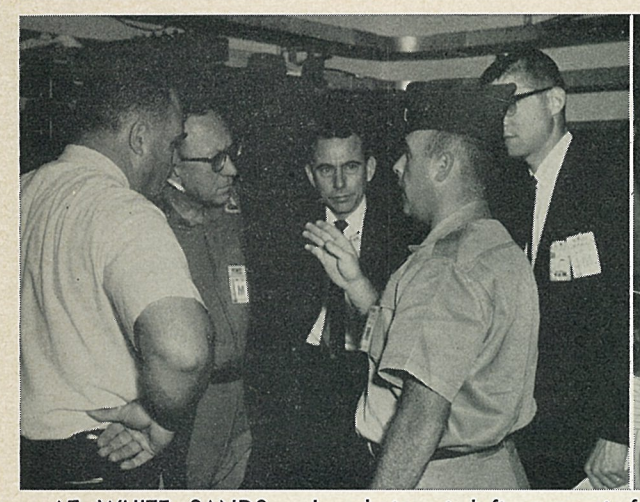
Seven Years Study Leads to BS Degree

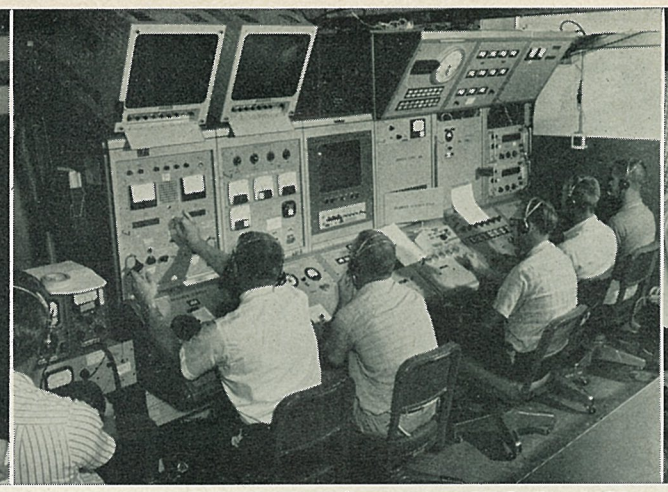
Arturo Medrano of GD/Convair Dept. 23-3 is another stalwart GD student who won his college degree this year after a long stretch of digging at his books.

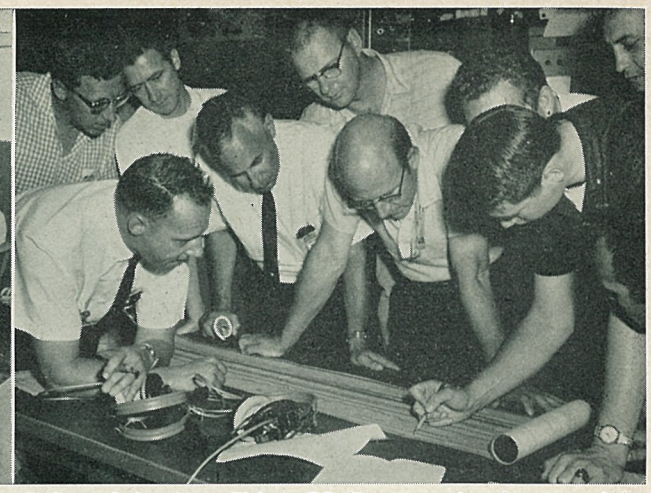
Medrano earned his BS in industrial management in San Diego State College's School of Business Administration. He started his undergraduate work at SD City College seven years ago, the same fall he joined GD/Convair in 1956.



"Who operates the control valves?"







AT WHITE SANDS — In photo at left, present for first guided flight test of Mauler missile at White Sands Missile Range, N.M., are (from left): Joe Baer, GD/Pomona base manager; Col. Norman T. Dennis, Mauler project manager, Redstone Arsenal, Ala.; W. J. Morrow, GD/Pomona director of Army weapons system management; Lt. William Huffman, Army systems test division, White Sands; Charles Schooley, Army test operations, Redstone. In center photo is control panel, manned by Ed Bates, GD/Pomona; David Ryan, Raytheon; Tom Hornby, FMC; Frank Diets, Robert Suhr, Max Elder, GD/Pomona. In photo at right, checking test data, are (front row) Wayne Webber, White Sands test operations; M. S. Roberts, chief of Mauler systems test and operational support; L. R. Carroll, senior Mauler missile project engineer; Pete O'Leary of flight analysis; Bruce Olson of project office; (standing) L. R. Dutcher, Mauler guidance section head; E. L. McEligot, systems section head; Tom Hornby, FMC; Charles Cogswell, project office; Bob Suhr of field test.

Signals Flash Across Pacific In Ocean Study

A transmitting station at General Dynamics / Convair began flashing coded signals across the Pacific Ocean to the Hawaii Islands this week in a continuation of the oceanographic study program being conducted for the Office of Naval Research, Washington, D. C.

Renewal of GD/Convair's research in development of a telemetering oceanographic buoy was approved by ONR last month. GD/Convair researchers have been investigating techniques to continuously gather, transmit, and analyze scientific data from the ocean and atmosphere since early 1960.

The current radio experiment to study ionospheric telemetry is one phase of the entire program. Other tasks include testing of an electric power system at sea and in a test chamber in extremes of temperature and humidity, study of moorings for the hull structure, model studies of discus-shaped buoys, design and fabrication of two prototype buoys.

Transmission of pre-recorded coded signals over the 2,600 miles from San Diego to a temporary receiving station at the Navy Receiving Facility at Wahiawa, on the island of Oahu, will simulate telemetry transmission from a buoy stationed in mid-ocean, said Robert Devereux, principal investigator for ONR with responsibility of program manager.

Results will disclose usable speed of transmission, probability of error, amount of degradation — or how much information might be lost in transmission.

"This is the first time such an experiment has been attempted for this kind of needed information," said Devereux. "As an added bonus, we will be able to check validity of the experiments against signal-to-noise ratio predictions made specifically for this program by the National Bureau of Standards, Boulder, Colo."

These predictions are based on geographic location of transmitter and receiver, characteristics of equipment, including transmitter power and frequencies to be used, and ambient noise at the receiver location.

A crew of three is manning the transmitting station at GD/Convair's Compass Rose site on 8-hour shifts around the clock, 7 days a week, for the month-long experiment. Transmissions, lasting approximately an hour, are sent six times a day using a specially-developed high performance discone antenna.

The ocean's surface is represented by a ground plane of 120 copper wires radiating outward 65 feet from a copper plate at the base of the antenna. The copper wire over the asphalt simulates as nearly as possible the conductivity of sea water.

Transmissions are made on an exact time schedule, with time at San Diego and Hawaii synchronized by electric clocks kept exact by National Bureau of Standards time signals. Instrumentation engineers taking turns at the transmitting station are J. T. Lack, W. C. Keefer, M. C. Torbett.

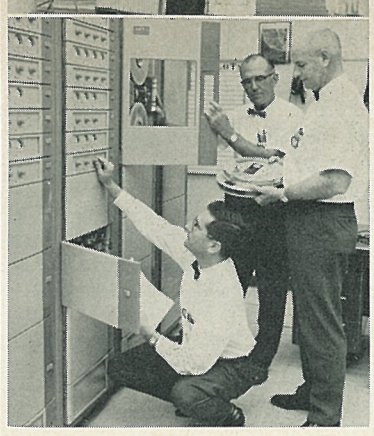
In a trial run on July 17, signals sent by Lack under his own call letters WA6CYD were received "loud and clear" by a ham operator, KH6BGS, at Kaneohe Bay on the east side of Oahu.

At each transmission, signals will be sent for 8 minutes on each of 5 different frequencies, said K. A. Morgan, test conductor of the radio-link experiment.

Frequencies will be close to ham bands and signals may be picked up by amateur operators. Frequencies to be used are 7.750, 13.545, 16.265, 20.835, 26.835 Mc.







TRANSOCEANIC LINK—At top, Hawaii-bound trio in GD/Convair oceanographic radio-link experiment check tape recorders and amplifiers before leaving for temporary receiving station site on island of Oahu. They are (from left) Jack Heming, S. T. Uyeda, Louis A. Scott (seated). Center shot shows Jim Lack at transmitting shack at GD/Convair's Compass Rose. Below, in photo taken in GD/Convair flight test data station is scene during reduction of data as final step in transmitting experiment. Ken Morgan (kneeling), test conductor, W. A. Harpster and C. R. Lewis, data station electronics engineers, prepare to play back tapes sent daily from Wahiawa receiving location.

Mauler Missile Tracks Drone Plane In Test of Radar at White Sands

A mobile missile air defense system designed to operate in the front line environment of the combat infantryman came closer to reality, the Army said last week, with the first guided flight of a Mauler missile.

The Department of the Army announced the dart-like missile tracked a drone target plane over the White Sands Missile Range, New Mexico.

The test was a measure of the system's radar and guidance equipment performance.

Mauler is designed to detect and kill high performance aircraft and short range tactical missiles in forward battle area.

For mobility the Mauler packs its own radar, electronic computer, power supply, and arsenal of nine cannister-mounted missiles on a self-propelled tracked vehicle similar to an armored personnel carrier. The normal crew is three, including the driver, but one man can operate the system.

To reach the front with a minimum of delay, Mauler can be air lifted by cargo aircraft. The Mauler weapon, minus the tracked vehicle, can be lifted by helicopter. Mauler's quick reaction and shoot-on-the-move capability will provide continuous all-weather air defense to forward elements of Army divisions. Mauler can also be emplaced to protect critical points such as bridges and supply points.

The firing was one of a series conducted since the start of development of the system in March 1960. Other firings have checked out the missile hardware, airframe and propulsion system.



LOADING — Mockup of Mauler guided missile in shipping container is loaded on engineering model of fire unit.

The Mauler is being developed by General Dynamics/Pomona under the technical management of the Army Missile Command, Redstone Arsenal, Alabama. Col. Norman T. Dennis is project manager. The contract is under the administration of Los Angeles Army Procurement District.

★ ★ ★

Early GD/Pomona Mauler operations began at White Sands on Sept. 4, 1960, six months after contract approval. Early firing tests and tests of various configurations of the Mauler development round were accomplished at temporary sites on the range while the required Mauler facilities were being made available.

The Mauler Complex provided by the Army and now occupied by GD/Pomona comprises six buildings located in two areas—an administrative and sub-system checkout operations facility and a separate Mauler launch site.

The operations area, approximately two-and-one-half miles from the Mauler launch site, contains the headquarters or operations building, laboratories and checkout facilities plus all necessary support functions. Security guards, provided by White Sands Missile Range, control access to the Mauler facility.

The launching area contains a blockhouse which serves as protection for a team of test conductors who are in close proximity to the weapon pod during tests.

Downrange from the blockhouse are camera target poles required to boresight fixed-range cameras. Six of these fixed-range high-speed data cameras are located at each of four camera sites around the launch area.

Further downrange are two camera sites, "Lake" and "Flower," provided especially for Mauler use.

The launching area is located in an optimum position for instrumentation and range safety.

Mauler Industrial Team members are Raytheon, Burroughs and FMC. These Industrial Team members have personnel permanently assigned to White Sands Missile Range in support of the Army weapon system test operation. This direct participation permits rapid feedback of information from the field to each home plant.

Personnel and facilities are provided at White Sands for repair and modification of all subsystems as well as complete test operations.

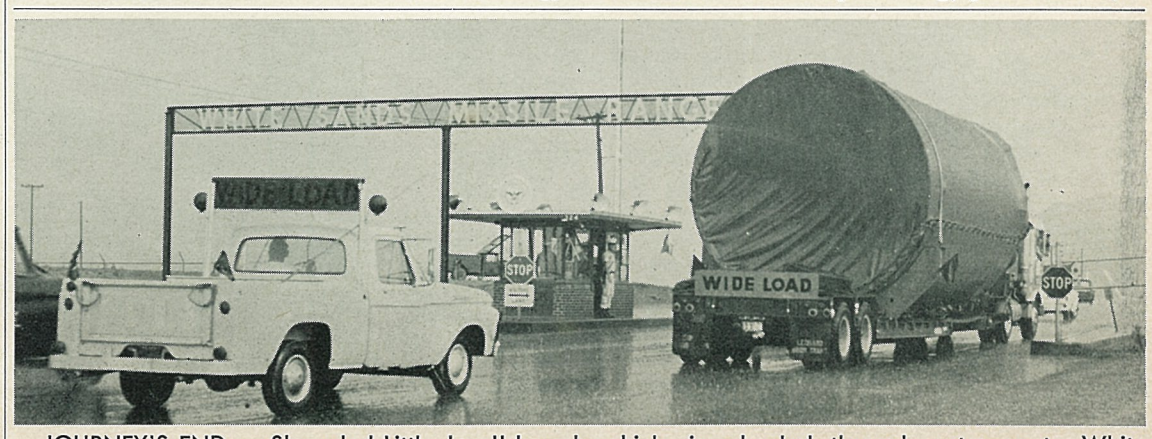
GD/Pomona operations at White Sands are under the direction of Joe Baer, base manager, who reports to M. S. Roberts in Pomona.

The staff at White Sands includes: Wayne Webber, test operations; John Hathaway, test operations support; William Campbell, support services; Bob Barrow, quality control; and representatives of all Mauler Industrial Team members.

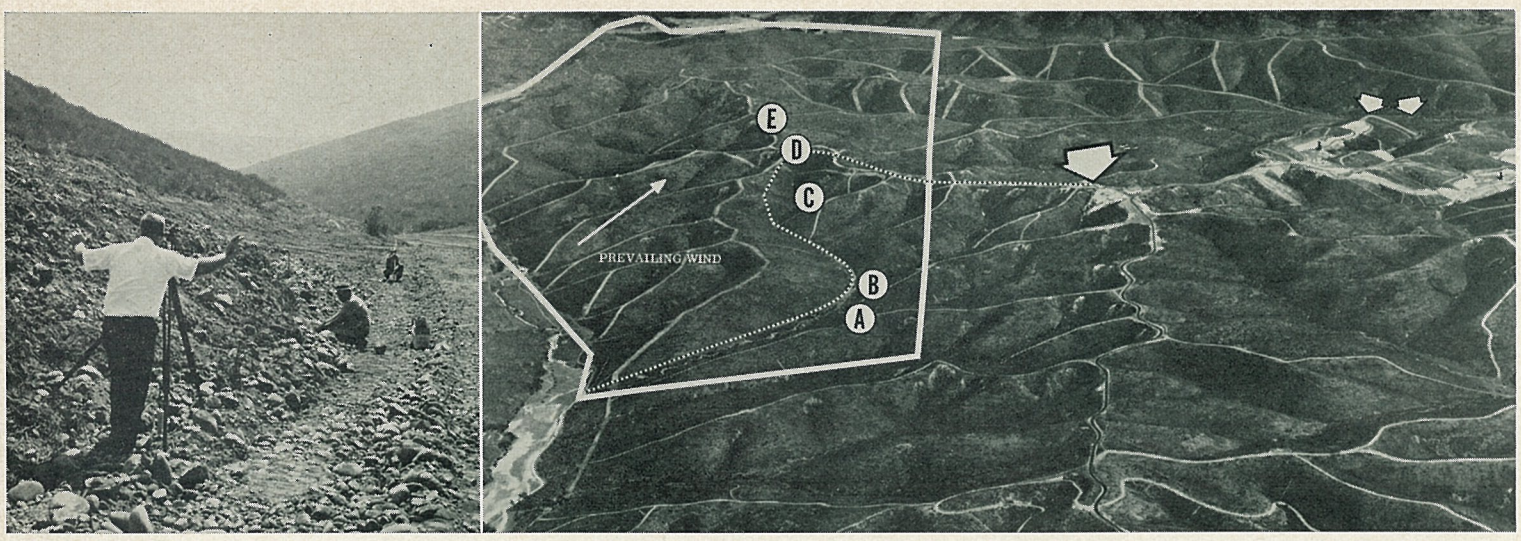
Bartolomei Speaks To Navy Audience

G. J. Bartolomei, assistant to E. D. Heller, manager of value control at GD/Astronautics, was guest speaker at a meeting of commanding officers and department heads at North Island Naval Air Station recently.

Bartolomei discussed applications of value engineering to non-manufacturing functions (supply, controller, industrial relations, data processing, public works).



JOURNEY'S END — Shrouded Little Joe II launch vehicle is wheeled through entrance to White Sands Missile Range, N.M., on July 16 after two-day trip from GD/Convair plant at San Diego. First launch vehicle will be test fired some time this month.



NEW FACILITY — GD/Astronautics recently acquired 2,420 acres adjacent to Sycamore Canyon static test site near San Diego for establishment of a GD/Astro Test Site. Master plan calls for construction of five major sites over period of years. Arrows point to Sycamore Canyon administration building and to test stand area. Solid line shows location of acreage and dotted line proposed access roads. At left, Wes Muse, Astro construction engineer, runs transit and signals to K. A. Laef and Virgil Smith during preliminary work on one site which ultimately will be devoted to liquid hydrogen testing.

New Test Site Under Way For GD/Astronautics

Plans have been formulated and preliminary work started on a new General Dynamics/Astronautics test site near San Diego.

Land for the facility, 2,420 acres, has been acquired through the government's General Services Administration. It borders and is just north of Air Force property on which Astro's Sycamore Canyon Static Test Site is built. The tract was formerly a part of Camp Elliott.

The new facility will be known as the GD/Astronautics Test Site.

This facility will enable Astronautics to centralize current test programs scattered at various points and, more important, provide room for expansion to meet future research and development needs.

Astro President J. R. Dempsey has established a special "task force" to formulate a detailed master plan for development of the area and to coordinate all phases of its growth.

W. F. Chana, manager at Sycamore Canyon, heads the group. It is composed of S. A. Levinson, engineering facilities; Abe Hurlich, research and development; Fred Wallace Jr., test laboratories; C. R. Smith, advanced systems; M. M. Chazotte, antenna/micro-wave/radar range; and D. E. Merriam, plant engineering. This group has met at least once each week since early June.

Chana's group has put together a detailed master plan calling for construction of five major test sites over a five-year period. They will be utilized to conduct: systems tests; liquid hydrogen tests; propulsion tests; hypervelocity impact tests; and exotic propellant tests.

They are currently identified as Sites A, B, C, D and E.

Astronautics currently performs tests at a number of different locations, hypervelocity impact tests at Green Farms; systems test at Point Loma; liquid hydrogen tests near Plant 71, etc.

"Bringing together these tests in a central location will improve operating efficiency and help reduce costs," Chana said. "Too, this remote area is an ideal spot for any type of test and we see its continued development and use over years to come."

Most of the acquired land is brush covered hills and valleys with a gradual upward slope from north to south. One low lying area sweeps from the northwest corner into the central portion of the tract. Two test sites will lie at the base of this low area. Two other sites will be built along a ridge east of the low area, while one site will lie in between.

One major access road is planned. It starts from a point near Sycamore Canyon's Assembly Building, traverses a ridge, then drops down into the low area. It will exit in what is called Beeler Canyon which runs westward to intersect Pomerado Road. Thus, access to the test site will be possible from Sycamore Canyon or directly from Pomerado Road.

Present efforts in the tract center around extensive surveying of future sites and roadways and clearing vegetation.

GD/E Mgt. Club Organized Aug. 1

Definite plans for a Management Club for General Dynamics /Electronics people at San Diego were laid at the first open meeting last Thursday, Aug. 1, at Kennedy's Steak House.

The organizational meeting culminated weeks of groundwork by a steering committee, headed by Kent Sinclair. Up until now, all eligible GD/E men and women were included in the GD/Convair club.

John Lombardo, GD/E general manager, and J. V. Kappler, Zone A manager of the National Management Association, explained the aims and purposes of the management organization.

N. J. Barnes of GD/E presented the proposed bylaws and constitution for the new group and L. M. Falos announced the slate of nominees for offices.

Balloting will be done by mail this month with installation scheduled for September.

The steering committee will remain active throughout the month of September until new officers are installed and familiar with their duties.

Committee members, besides Sinclair, Barnes, and Falos, are D. C. Newlon, membership qualifications; T. W. Moffett, finances, publicity, constitution; R. S. Durnell and J. E. Hardy, engineering contacts.

According to Newlon, there are now over 400 nonrepresented salaried GD/E people eligible for membership. Proposed dues are $18 a year, including initiation fee, payable at $1.50 a month through payroll deduction. Meetings will be held once a month.

All GD/E people interested in becoming charter members of the new group are urged to contact any one of the steering committee members.

GD/Convair Mgt. Club To Hear Harbor Talk

John Bate, director of the Port of San Diego, will describe activities of the San Diego Port Authority and future plans, encompassing development of harbor facilities and Mission Bay recreation area at this month's GD / Convair Management Club meeting.

The Aug. 21 meeting will be held at the Catamaran Hotel on Mission Bay. The 5:30 p.m. social hour will be followed by a 6:30 prime rib dinner.

Tickets are on sale now at all regular outlets at $2.75 for members, and $4 for nonmembers. Sponsoring department is engineering with M. C. Tombler in charge of arrangements.

Mgt. Club Organizing Winter Bowl Leagues

GD/Astro Management Club winter bowling leagues are now forming for play at Mission Valley Bowlero. Planned are a Monday night men's 800 scratch league and a 750 mixed handicap league for Tuesdays. Forest Erwin, ext. 3509, is accepting entries.

Asst. Secy. McMillan To Honor AF Crewmen

Names of three Air Force B-58 Hustler bomber crewmen will be added to the historic MacKay trophy Thursday to recognize last year's B-58 non-stop coast-to-coast round trip speed run as "the most meritorious flight of 1962."

Asst. Secy. of the Air Force McMillan will make the official presentation in ceremonies at Carswell AFB Thursday afternoon to honor the trip made by Maj. Robert G. Sowers, Capt. Robert McDonald, and Capt. John T. Walton.

The history-making flight was from Los Angeles to New York to Los Angeles in four hours, 41 minutes and 11 seconds on March 5, 1962. The flight previously had won the Bendix trophy.

Adding further drama to the Thursday occasion will be the roles played during the ceremony by two retired Air Force officers who were the first to write their names on the MacKay trophy for a non-stop transcontinental flight —a tortuous 27 hour and 57 minute flight in a single-engine T-2 in 1923, more than 40 years ago.

They are Col. Oakley G. Kelly (ret.) of El Cajon, Calif., and Col. John A. MacReady (ret.) of Merced, Calif. Both were lieutenants at the time of the 1923 flight. Col. MacReady is the only man in history whose name appears on the MacKay trophy three times. Col. Kelly's name appears there twice.

The MacKay trophy is the fourth major aircraft award won by crews flying B-58s. The others were the Thompson Trophy, Bleriot Trophy, and Bendix Trophy. B-58s have set a total of 14 world speed, altitude, and payload records.

CENTAUR VIEWED AS NEW 'WORKHORSE'

An Atlas/Centaur launch vehicle combination would serve as a "space truck" to haul a compact car to the moon, but the cost (about $9 million) offers little competition to freight hauling operations!

GD/Astronautics' Grant L. Hansen, vice president and program director—Centaur, used this unusual comparison in addressing the San Diego Chapter of the National Defense Transportation Association.

The group met at Astronautics recently with J. W. Higgins, Astro traffic supervisor, as host. Col. D. Lee Batten, chief of the Transportation Branch, Space Systems Division, USAF, shared speaking honors.

Hansen's reference to the compact car was an example of how much cargo Centaur can carry, 2,300 pounds. He told the group Atlas has been a "workhorse" of the space age to date with such programs as Mercury and Mariner. He added that Centaur can be the workhorse of the next phase of development — sending probes to the moon, the planets and the sun.

Studies Ordered By Army, USAF

Two important study contracts have been awarded to General Dynamics/Pomona by the U. S. Army and Air Force.

A $138,000 contract for study of a periodically elevated radar system for battlefield surveillance has been awarded by the Army.

GD/Electronics at San Diego will be associated with GD / Pomona on the program, known as PEEK. GD/E's responsibility deals with development of radar and display aspects under direction of R. C. Baker, project engineer.

E. J. Velton, design specialist in the advanced programs group at GD/Pomona, has been designated as project engineer for the PEEK program.

A $50,000 study contract also has been awarded the Pomona division by the Electronic Systems Division of the Air Force. This contract calls for evaluation and recommendations of techniques and equipment for design of an air-launched rocketsonde to sense air temperatures, humidity, pressure, and density at high altitudes.

Steppers Propose 'Short Pants Dance'

Annual "Short Pants Dance" of GD/Pomona's Convairiety Steppers will be held Aug. 16.

Regular shorts, bermudas, jamaicas or clam diggers will be required costume for the outdoor dance on PRA hand ball courts, announced Commissioner Lloyd Scarborough.

Also on Steppers' calendar this month is a Friday dance, Aug. 30,

NASA Reports $55.5 Million In Job Awards

Among $55.5 million in major contracts announced recently by NASA's Lewis Research Center were $19,869,625 in awards to General Dynamics Corporation organizations in San Diego.

They included: $199,528 for development of a co-axial plasma gun; $101,292 for additional Centaur fabricating and testing facilities; $30,000 for development of neutron activation analysis procedures for the determination of oxygen in potassium; $1,450,000 funding of Centaur ground support equipment; $142,850 for measurement of neutron spectra in liquid hydrogen; $8,132,413 to deliver Centaur vehicle and support equipment; $120,423 for engineering studies in support of the Centaur space vehicle development program—master contract, services accomplished by task order; $105,502 funding of Centaur vehicles; $87,617 for investigation of sputtering mechanisms under ion propulsion conditions; and $9,500,000 additional funding of seven flight Atlas/Centaur launch vehicles.

Mgt. Club to Sponsor Tennis Tournament

GD/Astro Management Club will sponsor a tennis tournament for present and prospective members to be played Aug. 17 and 18 at Morley Field courts. Finals will be run off Aug. 24 on ARA facilities.

Planned are contests graded for novice, intermediate and advanced players in singles and doubles categories. Application blanks are now available at the employee services office, Bldg. 8.



HEAD MAN — RAdm. Frank Virden, right, commander of U. S. Navy destroyers and cruisers in Pacific, is briefed on Tartar and Terrier guided missiles produced at GD/Pomona. With him are Capt. E. J. Pawka, Bureau of Naval Weapons Representative at Pomona division, and C. F. Horne, division president. Several ships in Admiral Virden's command are armed with Tartar and Terrier missiles.

Buyers Participate In Two-Month Study

G. W. Cowan and D. A. Sexton, buying supervisors in GD/Astronautics purchasing, were among purchasing specialists from the San Diego area who recently completed a two-month study of modern practices in purchasing management.

They were members of a San Diego State College seminar sponsored jointly by the college's School of Business Administration, the San Diego Purchasing Agents Association, and the Small Business Administration.



QUITTING TIME—Luella Jones (Dept. 24, GD/Pomona) turns over files from control desk to her boss, H. A. Holley Jr., planning supervisor. She retired July 26 after career with General Dynamics that spanned 21 years.

Member of Original Terrier Team of 20 Feted on Retirement

When the Japanese struck Pearl Harbor on Dec. 7, 1941, Luella Jones was a housewife and mother living in San Diego. Ten months later she was working at GD/Convair because "it was the patriotic thing to do."

Twenty-one years later the housewife turned career woman was feted by her coworkers in Dept. 24 at GD/Pomona with a retirement party at the Brasilia Inn's Sky Room in Pomona.

In preparation for her first job, Mrs. Jones took a war training course in factory liaison and began her career with General Dynamics filing blueprints, later working as a liaison engineer.

With the war over, Mrs. Jones became a housewife again. But in 1948 she returned to Convair and in 1950 she became a member of the original team of 20 working on the first Terrier missile.

When the Guided Missile Division (now GD/Pomona) officially opened, Mrs. Jones transferred to Pomona and went to work in Dept. 24 (tool engineering).

Now that her "official" working days are over, Mrs. Jones says she will devote more time to her husband, a retired Civil Aeronautics Authority employee, and her three children and four grandchildren.

Family ties to GD/Pomona continue, however. Her son, Frederick, a retired Army lieutenant, is a systems analyst in Dept. 22.

Weekly Attendance For Bridge Holds Up

From eight to ten tables of bridge are in play each Wednesday night in the Convair executive dining room, Pacific Hwy., under auspices of the CRA Bridge Club.

Frank Westphal, club president, says that weekly attendance at the bridge sessions has been gratifying during the vacation months. All General Dynamics bridge fans are eligible to take part, and bring their friends on any Wednesday night except the fourth Wednesday of each month. That night is reserved for Master Points play, open only to General Dynamics players.

Ayer is New Head Of CRA Solo Flyers

Harold Ayer of GD/Convair Dept. 6 is newly-named president of CRA Solo Flyers, Commissioner Don Larsen announced.

Ayer succeeds W. W. Frase, who has headed the flying group for a number of years. Frase has left the company.

GD / Convair and GD / Electronics members of Solo Flyers are eligible for flying lessons at special rates through Jim's Air Service, Lindbergh Field. All members of the pilot group must pass a ground school course before actually taking to the air.

Valley Mgt. Assn. Gives Scholarships

EDWARDS RS — An Astronautics son and daughter have received scholarship awards from General Dynamics Antelope Valley Management Association here.

Pamela Brooks, daughter of Frank W. Brooks, Dept. 975-5 security officer, received a $200 award. John Short, son of John W. Short, Dept. 975-1 flight test engineer, received a $100 award.

Pamela will study language at the University of California, Berkeley, with an eye to entering diplomatic service. Short will study toward a law degree.

Committee members for the scholarship program were Larry Failor and Paul J. Grubl.

Value 'Road Blocks' Under Discussion

E. A. Lindem, GD/Astronautics Dept. 130-3, was discussion leader at a symposium sponsored Aug. 6 by San Diego chapter, Society of American Value Engineers (SAVE), in GD/Convair executive dining room.

Session centered about overcoming human relations "road blocks" as related to value engineering seminars. Object was to explore techniques leading to "genuine agreement, not a reluctant surrender."

General Dynamics men coordinating ticket arrangements at various San Diego facilities included Lindem, GD/Astro, W. D. Lavis, GD/Convair, W. D. Garrett and R. Mansell, GD/E.

Services Offering Discount Tickets

Discount tickets now available at GD/Convair employee services are:

Frontier Town, Big Oak Ranch off Hwy. 80, open Wednesdays through Sundays, 10 a.m. until dark. Adults, 50c; children, 6-12, 35c; under 6, free.

Seaforth Landing, 1641 Quivira Road, Mission Bay, half-day sportfishing trips, $4.50. Reservations required.

Cajon Speedway, Gillespie Field, El Cajon, $1.25, $1, 50c. Racing every weekend; motorcycles, Aug. 9, 16, 30 at 8 p.m.; claiming stocks, Sundays, 7 p.m.

$2,673 Authorized In Emergency Aid

GD/Astronautics Employees' Con-Trib-Club granted $2,673.60 in Emergency Aid to 19 employees and their families in the period June 10 to July 7.

Emergency Aid is Con-Trib's means of helping employees faced with emergencies beyond their control. Funds are provided as out-right grants and no repayment is required.

Ticket Rate Lowered For Show at Circle

Astro employee services now has reduced rate tickets for matinee and evening performances for Aug. 11 at Circle Arts Theatre production "Wish You Were Here," starring Frankie Avalon.

Matinee tickets are $3.15, $2.60 and $2.10. Evening tickets are $3.60, $3.00 and $2.40.

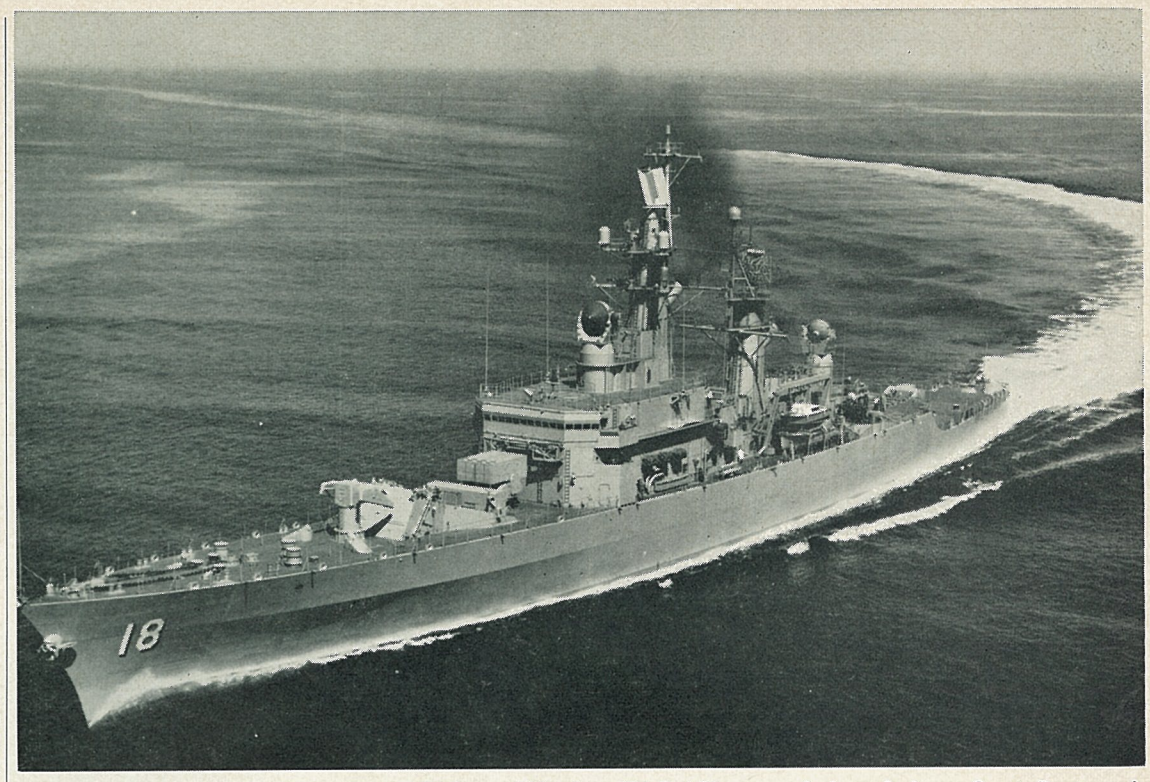
GD/E Reliability Group Reorganized

GD/Electronics-San Diego engineering reliability group has been reorganized into two separate groups, according to a recent announcement by R. J. Cary, manager of engineering services.

The engineering parts and reliability group, under R. F. Voell, will be responsible for the engineering effort in reliability, parts application and analysis, and engineering parts and material standards.

The engineering test and evaluation group, under E. W. Revell, will be in charge of all engineering environmental test work and the environmental test facility.

Both Revell and Voell report to Cary.



POWERFUL AND SLEEK — The 7,000-ton Worden (DLG-18), commissioned Aug. 3 at Boston, is third of improved Coontz class guided missile frigates which carry GD/Pomona-built Advanced Terrier missile launchers fore and aft. Ship is shown completing high speed turn during preliminary acceptance trials. (Official U.S. Navy Photo.)

Atlas 75-F Departs As Test Career Ends

General Dynamics/Astronautics Sycamore Canyon Test Site lost an "old friend" late last month, when Atlas 75-F departed after more than a year at the static testing facility.

During its stay at Sycamore S-2, 75-F underwent testing in support of three different programs under two test conductors, R. G. Killian and D. C. Remsnyder.

Also instrumental in the test programs were G. G. Christ and Frank DiPiazza.

On hand for "good-byes" on 75-F's departure were W. F. Chana, Sycamore operations manager; Ralph Harper, chief of inspection; and Vern Neuhart, Air Force quality control representative.

Teen-Agers in Charge For Idyllwild Trip

Teen-agers of the CRA Road Runners are in charge of the coming weekend outing of the trailer group to Idyllwild, Aug. 19-21.

Younger members of the roving outfit are making all decisions—from choice of camp site to cranking the handle on the ice cream freezer for home-made ice cream at the Saturday potluck.

Tom Hurley is wagonmaster; Linda Scholl, wagonmistress, with Danny Kunkle and Susan Graham assisting.

Ten club trailers and three guest vehicles camped at Pair-a-dice Hideaway at Guatay over the weekend of July 19-21. Square dancing was enjoyed on both Friday and Saturday evenings.

F. J. Andrews Named Veterans' Commander

Astronautics' F. J. "Andy" Andrews of Dept. 365-0 (Atlas weapons system administrative services) has been named commander of the Cajon Valley Chapter, Military Order of the World Wars.

The organization, open to all commissioned officers of the armed forces who served in World Wars I and II and Korea, is dedicated to public service.

General Dynamics employees in the area interested in joining the organization may contact Andrews evenings at 444-5279.

$5,250 in Gifts Okayed By Convair Con-Trib

Two San Diego charitable organizations received contributions totaling $5,250 through approval of the GD/Convair Employees' Con-Trib-Club Committee July 30.

Paradise Valley Hospital was voted $5,000 for its building fund and the National Cystic Fibrosis Foundation, $250 for its 1963 drive.

Worden, Fourth Ship so Named, Placed in Commission by Navy

The Navy's newest guided missile frigate, USS Worden (DLG-18), was placed in commission at the Boston Naval Shipyard in Charlestown, Mass., last Saturday (Aug. 3).

VAdm. William R. Smedberg, III, USN, Chief of Naval Personnel, Washington, D. C., delivered the principal address at the commissioning ceremony. The admiral, a 1922 graduate of the U. S. Naval Academy, was also principal speaker at the ship's launching in Bath, Maine, June 2, 1962. Mrs. William R. Smedberg, the admiral's wife, was ship's sponsor and christened the Worden.

Also attending the Worden's commissioning were RAdm. Arthur H. Taylor, USN, Commandant of First Naval District, and Capt. Frank C. Jones, USN, Commander, Boston Naval Shipyard.

Worden carries two dual Advanced Terrier missile launchers one forward and one aft. Advanced Terrier, produced for the Navy by General Dynamics/Pomona, is a supersonic surface-to-air guided missile with a solid fuel rocket motor. The 27-foot long missile weighs about 3,000 pounds and has a lethal range of over 10 miles.

GD/Pomona was represented at the commissioning ceremonies by C. D. Cornell, assistant to the president. Cornell, on behalf of the company, presented the ship with a set of ceremonial stanchions, modeled after the Advanced Terrier missile.

The 7,000-ton Worden is named in honor of RAdm. John L. Worden, USN, and is the fourth ship of the fleet to be so named. Admiral Worden served as the first commanding officer of the ironclad Monitor and brought her into battle during the historic clash in Hampton Roads during the Civil War. He later served as superintendent of the U. S. Naval Academy from 1869-1874.

In addition to GD/Pomona-built Advanced Terrier missiles, Worden has anti-submarine rocket weapons (ASROC), conventional 3-inch 50-caliber guns and torpedo tubes. She is further equipped with a helicopter landing platform and the latest search and detection equipment, for use against enemy air and underwater targets.

Commanding officer of the Worden is Capt. Scott Lothrop, USN, who was born in Brookline, Mass., and is the son of a Navy commander and father of a Navy midshipman. The captain is currently a resident of Stamford, Conn.

The first Worden (torpedo boat destroyer 16), built 60 years ago by Maryland Steel Co., Sparrows Point, Md., served with the fleet for more than 17 years.

The second Worden (DD-288), was built by Bethlehem Shipbuilding Corp., Squantum, Mass., and was placed in commission in 1920. Her 11 years as an active duty vessel included goodwill visits to major ports around the world.

Puget Sound Navy Yard, Bremerton, Wash., constructed the third Worden (DD-352). She joined the fleet in 1935 and was in upkeep status when the Japanese struck Pearl Harbor Dec. 7, 1941. She earned four battle stars for her support during the Pearl Harbor Attack, the Battle of Midway, the Guadalcanal-Tulagi Landings, and the Battle of the Eastern Solomons. The DD-352 broke in two while off the coast of Alaska in January, 1943.

Worden belongs to the new class of guided missile frigates, the first of which was her sister ship Leahy (DLG-16). Compared to the earlier guided missile frigates, this new class ship has greater overall length, more beam, heavier displacement and greater missile launching capabilities. The most recent habitability improvements have been incorporated into their construction, including air conditioning of all spaces. All are powered by two steam turbines providing speeds well in excess of 30 knots.

With addition of Worden to the fleet, the Navy now has 44 ships armed with GD / Pomona-built missiles — 24 with Terrier and 20 with Tartar missiles.

Paul Grubl to Head Valley Mgt. Assn.

EDWARDS RS — Paul Grubl, president, heads a new slate of officers installed last month by the General Dynamics Antelope Valley Management Association.

Other officers are Phil Ayer, vice president; Doug Wheeler, secretary; and Glenn Baxter, treasurer.

Named to the board of directors were Roy Kurtzman, Clark Bush and Larry Failor.

Reserve Officers To Meet Wednesdays

Naval Reserve officers among GD/Astro employees have been invited to participate in activities of USNR Composite Company 11-1, an all-officer unit meeting at Naval Reserve Training Center.

Beginning Aug. 21, the unit will meet each Wednesday at 7:30 p.m.

GD/Astro men presently participating include Norton Shepperd, G. D. Cunningham and O. B. Robinson, all Dept. 210. Interested reservists may contact Shepperd at ext. 2745 for further information.

Explorer Boys On River Trip

Twenty-four boys of the GD/Convair Management Club-sponsored Air Explorer Squadron 340 will head north this weekend to the white waters of the Rogue River on their annual summer trek.

This will be the fourth Rogue trip for the squadron. Other adventures have taken the boys into rugged areas of the High Sierras, down the San Juan of Colorado, and Merced Rivers.

This year's outing will be a repeat of last summer's trip—hopefully without the pouring rain which soaked bodies and morale then, recalled Gene Boyd, squadron adviser.

The boys, all 16 to 18, have spent weeks in preparation. They have been practicing with their rubber boats on San Diego Bay and getting themselves hardened for their two weeks in the wilderness.

Half of the group are experienced frontiersmen from previous trips and two of the adult advisers, Jim Megargee and Nate Wells, were along on last year's voyage. Evan Ohlund is third adult accompanying the river runners.

For those interested in viewing the actual river and type of country the boys will be traveling through, Boyd suggests a trip to the movie, "How the West Was Won." River scenes were actually shot on the Rogue River, showing the boiling water tumbling over boulders and down falls.

Astro Photo Wins National Honors

A photograph taken by Keith Adams, GD/Astro still photographer, has been accorded top national honors.

The picture illustrates Adams' new technique for scientific measurement through photographic grid super-imposition, and was selected for inclusion in Professional Photographers of America's 14-picture traveling exhibit.

GD/Astro photographers dominated the show's industrial category, providing 10 per cent of the pictures chosen for hanging.

Astro Photographs Earn Recognition

Twenty photographs by eight General Dynamics / Astronautics lensmen received Awards of Merit at the recent Western States Photo Exhibit, Los Angeles.

Two were selected for the show's "Court of Honor" and received Gold Medallion Awards.

GD/Astro's entries were in the industrial class and represented 10 per cent of the total 109 selected in this category.

Medal winners were Frank Tercey and Keith Adams. Other GD/Astro photographers honored were Bob Weissinger, Bob Ries, Jack Stevens, John Oldenkamp, Dave Mathias and Walt Gault.

All report to E. H. Boldrick, manager of still photography (Dept. 125).

PINE CREST DRAWING GROWING NUMBERS OF CONVAIR, GD/E FOLK

Pine Crest, CRA's mountain resort area near Julian, is attracting more and more vacationers who head to the hills over the summer weekends or vacations.

People at GD/Convair, GD/Electronics, or GD / Astro at Plant 1 may camp in the area for a week, if they wish. All GD/Astro people may use the area for picnicking at any time. Each family is entitled to bring a guest family, said J. K. Field, GD/Convair manager of personnel services.

A minimum charge of $1 for use of camping facilities is collected for one or two days; 50 cents a day thereafter. There is no charge for picnicking.

Water is available near the camping ground. However, as yet there are no electrical hookups for trailers. Rest rooms, with showers, are located adjacent to the camping areas.

About a dozen barbecue pits are located around the grounds, but campers are advised to bring stoves, if possible, to assure themselves of cooking facilities. There are plenty of lightweight picnic tables which can be spotted conveniently near trailers or tents.

To reduce fire hazard, only charcoal is permitted. It may be purchased on the grounds, as well as soft drinks, and a few other items, such as candy or ice. Food supplies can be bought in Julian, only three miles away.

Games, including ping pong, horseshoes, softballs, badminton sets, may be checked out from the overseer.

Families are urged to leave their pets at home. Only small dogs on leashes will be allowed within the park.

J. E. Rutledge Heads Procedures Chapter

J. E. Rutledge, GD/Electronics manager of systems and procedures, will head the San Diego Chapter of the Systems and Procedures Association as president for the 1963-64 term.

He succeeds J. A. Moore of GD/Astronautics, outgoing president, who is now Chapter director.

Other officers who took up their new duties as of July 1 are J. R. Mackley of GD/Astro, vice president; Ed Wes of Home Federal Savings and Loan, secretary; W. B. Heller of GD/Convair, treasurer; Ward Soule, GD/Astro, International director.

Meetings will resume in September on the first Tuesday of every month.

Saturday Schedule For Salvage Set

Saturday schedule for the rest of this month at GD/Convair and GD/Astro salvage yards for employee sales is:

GD/Astro — Aug. 10, 24.

GD/Convair — Aug. 17.

Neither of the salvage yards will be open on Saturday, Aug. 31, because of the Labor Day holiday weekend.



BEST IN WEST — GD/Astro photographers whose work was honored at recent Western States Photo Exhibit, Los Angeles, display winning prints. From left are Keith Adams, Bob Weissinger, John Oldenkamp, Manager E. H. Boldrick, Walt Gault, Dave Mathias, Franck Tercey. Not pictured are Jack Stevens, Bob Ries. Tercey and Adams received Gold Medal awards.



BOUQUET OF ONE—Gigantic dahlia is armful for tiny Tina Bobrowski, whose father, Stan, is in GD/Astro Dept. 140-1. Tina will be on hand for joint ARA-CRA Garden Club Summer Show, Aug. 11, 1 to 6 p.m. in Balboa Park's Floral Assn. Bldg. All General Dynamics gardeners have been invited to display fruits, flowers and vegetables by bringing them to show between 7 and 11 a.m.

German Shorthair Wins Best of Show

"Heide," a German shorthaired pointer belonging to GD/Astro's Tom Vercellino, Dept. 374-1, won best of show honors—and a champagne bucket—at ARA-CRA Gun Club's informal hunting dog show July 20.

Twelve other General Dynamics dog owners collected cigarette lighters as "best of breed" awards for their entries. The show, open to sporting breeds only, attracted over 200 canine stars.

Warner "Gunner" Gatterman was show chairman, with Fon Johnson of Fon Jon Kennels doing the judging.

Astro Sailors Buy Galaxy Class Boats

ARA Sailing Club's "going" program for GD/Astro sailors will receive an added boost later this month with delivery of five club-owned Galaxy-class boats.

The 14-foot Galaxies will handle four to five persons, and are fitted with "Super Satellite" sails.

At present, the club has arranged discount boat rental rates for members at Mission Bay's Vacation Village. Members may rent day sailers for $2.50 an hour instead of the usual $3.50 rate upon presentation of club credentials.

Travelers to Leave For Mexico Aug. 16

Twenty-one General Dynamics travelers will board the train next Friday (Aug. 16) for the two-week de luxe tour of Old Mexico.

Jim Hardison of GD/Convair service parts and instructor of CRA-ARA Spanish courses will be conducting his fourth annual trip to the highlights south of the border for General Dynamics people.

Itinerary will take them to Mazatlan, Guadalajara, Mexico City, Cuernavaca, Taxco, and Acapulco. Return date is Sept. 1.

JOINT LENS CLUB TO HOLD CONTEST

ARA-CRA camera fans will gather at 7:30 p.m., Aug. 18 in Balboa Park's Photo Arts Bldg. for the joint club's quarterly photo contest. Members have been encouraged to submit four examples of their work in color transparencies or black and white prints.

Bowling Loops Form Teams

Entry blanks for ARA's many winter bowling leagues for the 1963-64 season will be available at all employee services outlets beginning Monday (Aug. 12).

Tentative start date for all plant leagues will be the week beginning Sept. 16. Organizational league meetings for team captains will be held one week earlier.

Every effort will be made to place teams in leagues of their choice, but a first-come, first-served basis must prevail on more popular leagues, according to ARA Commissioners Tony Minniti and Bryan Weickersheimmer.

Four leagues will meet at Clairemont Bowl on Tuesdays, including 800 and 850 men's scratch, 675 mixed handicap and 730 mixed scratch. A 700 mixed handicap league will roll at the same location on Wednesday, while a 775 men's scratch, 725 mixed scratch and 700 mixed handicap loop will roll Thursdays. Friday night at Clairemont will feature a 700 mixed handicap and 750 mixed handicap loop, plus a swing shift league to roll after regular Friday night work shifts.

Frontier Lanes will have a 750 mixed handicap loop on Wednesdays.

The new La Mesa Bowl will feature a 725 mixed handicap league on Tuesday and a 750 mixed handicap loop on Wednesday.

Parkway Bowl will host a 700 mixed handicap league each Tuesday.

Mission Valley Bowlero will be the scene of a Wednesday night 700 mixed handicap loop.

A 600 mixed foursome league will roll at Poway Bowl on Wednesdays.

Astro Wives' Club members interested in bowling may contact Ann Ragusa at 273-6264.

SKILLS MARSHALED FOR PARADE ENTRY

"The more the merrier" is the word for a special meeting to be held at 8 p.m., Friday (Aug. 9) in ARA Clubhouse.

Purpose is to organize a task force — skills ranging from artist to carpenter to mechanic — to produce a float for this year's entry in the annual Mother Goose Parade.

The group faces a built-in challenge: last year's effort (ARA's first) took the Parade's Sweepstakes Award.

Meeting plans include showing of color, sound movies of the 1962 parade, including the ARA entry, and display of several proposed designs for this year's float.

Project coordination is under direction of ARA Commissioner Chuck Ogle, who spearheaded last year's production.

Schneider, Knutson Lead Pistol Shoot

Roland Schneider fired 281 and J. S. Knutson 275 in ARA Pistol Club's .22 Short National match held July 26 at San Diego Police Pistol Range.

In master class of a .22 Camp Perry course fired the same date, Ralph Sanderlin led with 291, while Knutson trailed with 288. Warren Ranscht led expert contenders with 288, followed by a 283 from Bill Dittman.

Sharpshooter honors went to Les Vivian with 261, while Byron Clapper fired 254 for second place.

Horseback Riding Class Organizing

A new series of horseback riding lessons sponsored by ARA Riding Club will begin Sept. 8 at Bonita Valley Farms, accommodating beginning, intermediate and advanced riders.

Classes will meet Sunday mornings from 11 a.m. until noon for eight weeks. Total cost of the series is $15 per person.

Entries Close In Golf Event

Tomorrow (Aug. 8) is entry deadline for ARA Golf Club's coming tournament at Bonita, Aug. 10 and 11—a "Scotch two-some" event with starting times for partners available from ARA Headquarters, ext. 1111.

Golfers will use the Bonita event as a warm-up for the upcoming ARA Plant Championships to be played at Carlton Oaks Sept. 8, 15, 21 and 22. Entries for this contest open Aug. 12 and close Aug. 23.

Championship sign-ups will be accepted at employee services offices at Plants 71, 1, 19, Sycamore and Rose Canyon. Entrants must be members of ARA Golf Club, have a current Club handicap, and have participated in at least three ARA-sponsored tournaments since the 1962 championships.

Entry fee is $5 which includes greens fees for the first match (forfeited if player does not participate opening day). Entrants will pay their own fees for subsequent rounds.

The tournament will be organized for match play by handicap flights.

* * *

76 WINS GROSS AT TORREY PINES

At ARA Golf Club's July meet at Torrey Pines, ARA Commissioner Dick Tobias shot 76 for low gross score in the 0-13 handicap bracket, with a net 68 by H. H. Moran taking other category honors.

In the 14-18 handicap range, gross winner was E. J. Oliwa (84), and Al Lane (67), low net, while Lloyd Norris (92) and J. T. Polsfut (70) led gross and net scorers respectively in the 19-23 class.

Ed McCleave's 96 was low gross in the 24-36 category, with H. J. Gunderman shooting a net 70.

Toastmasters Club Earns Top Honors

Mount Helix Toastmasters Club #126, which includes a number of GD/Astro men among its members, has received word of its nomination for Toastmasters International's "Club of the Year" award.

Club officers for the period covered by the nomination included Seymour Zeenkov, Dept. 360-1, president; Ira Fisher, Dept. 526-6, administrative vice president; Glenn Vail, Dept. 642-2, secretary; and David Rhoads, Dept. 526-2, sergeant at arms.

For two consecutive years, the Mt. Helix group has won the District 5 "Club of the Year" award. Nomination for the international honor was announced by Cy Campbell, Dept. 654-5, District 5 governor.

GD/Astro men holding current office in the club include Vail, educational vice president; Rhoads, administrative vice president; and Warren Marsh, Dept. 195-0, secretary.

The group meets each Wednesday, 6:45 p.m., at Helix House, College Grove Center. Guests are welcome.

Barbecue Scheduled And You're Invited

An open invitation is out to all GD/Convair and GD/Electronics families to join in the CRA Fishing Club's coming family barbecue at Pecan Park.

Date is Tuesday, Aug. 20, at 6:30 p. m.

Fishing Club members will have the charcoal broilers set up and burning so that all guests may broil their own steaks, chicken, or fish. Every family will supply its own picnic dinner.

A short business meeting will be held at 7:30 p.m. followed by a movie, said CRA Commissioner Bob Menzie.

For information call Menzie, evenings, at his home phone, 281-8247.

Sports Car Fans Join in 'Ramble' Featuring 34 Antique Autos

Half a dozen GD/Convair sports car fans donned dusters and high-buttoned shoes to chug along in the first annual "Antique Ramble," co-sponsored by the Antique Automobile Club of America and KOGO television and radio station over the weekend of July 20-21.

Gerry Wright, CRA Sports Car commissioner, was tour chairman and rode, with wife Grace, in his 1913 Cadillac roadster.

Thirty-four cars, dating back to a 1906 Model N Ford, and 87 passengers, all garbed in costumes of the era coinciding with their particular car, drove from Old Town, through Rancho Santa Fe, paraded down Escondido and Vista main streets to the destination at Marty's Valley Inn. There they clad themselves in old-fashioned swimming suits for a bathing beauty contest.

Return trip was made down Highway 101 by way of Del Mar where awards were presented.

Other GD/Convair people on the Ramble were Fred Thatcher, driving a 1930 Invicta; Mary Lou Stewart and husband, Jim, in a 1932 Dusenberg; Bob and Bette Hayward, 1914 Model T Ford. Charles MacDonald, together with several other GD folk, helped organize the start of the caravan.

Scenes of the fun excursion were shown over Channel 10 last Friday and will be syndicated as a nation-wide program.

Number of Shooters In Gun Club Climbs

Tight scores marked the July 21 NSSA registered skeet shoot sponsored by CRA-ARA Gun Club at the Gillespie Field Range.

Thirty-six men and women vied in the 50-bird event, said CRA Commissioner Jack Swank, who remarked on the increasing number of shooters turning out for the Gun Club's registered events.

Glen Eubank won the champion title with 50 out of 50.

Herb Langfeldt shot a 49 to top the combined Class AA and A division and Bob Beckett was first in the combined Class B and C with a 48. Class D winner was John McCaffery, 47; Class E, Walter Palmer, 49.

Lady champion was Elizabeth Beckett with 36.

The next scheduled registered skeet shoot will be Aug. 25 and an ATA registered trapshoot is set for Sunday (Aug. 18).

Leader Challenged By GD/E Ball Club

GD/E Material Control was climbing into challenging position of Hi-Lows, leading National League team in GD/Convair's "slow-pitch" softball tournament.

GD/E Material Control downed Hi-Lows on July 18, 10-6, and went on the next Thursday night to beat Accounting, 12-8. Hi-Lows blanked Material, 11-0, on July 25. Accounting won its game from Material the preceding week by a tight 12-11 score.

In American League play on July 23 Fire Dept. beat GD/E Purchasing, 8-7; and Fabrication downed Tool Store 25, 5-4.

League winners will play a best-of-three game series for the plant championship next week, Aug. 13, 15, 20, at 8 p.m. at John Adams Playground, 35th and Adams Sts.

Gardeners to Learn Flower Arranging

CRA gardeners will join with ARA Garden Club members tonight (Aug. 7) to learn the intricacies of flower arranging and to finalize plans for the joint CRA-ARA Summer Flower Show Aug. 11.

A demonstration of flower arrangements, using artificial flowers, will be put on by the Pottery Village at this evening's 7:30 p.m. meeting in the Floral Association Bldg., Balboa Park, said Commissioner Gene Zimmerman.

All GD/Convair and GD/Electronics flower growers are urged to enter their prize dahlia blooms in this Sunday's annual show, also held in the Floral Association Bldg. Entries will be accepted there from 7 to 11 a.m. on show day. The public will be admitted free of charge during afternoon hours, 1-6 p.m.

Coin Club's Exhibit Of Convair Medals Set For Cafeteria

General Dynamics people at GD/Convair Plant 1 will have a chance to view the display of Convair tokens and medals, assembled by the CRA Coin Club, as it goes on public exhibit within the plant tomorrow (Aug. 8).

The historical display will be placed in the Convair main cafeteria, next to Bldg. 19 on Pacific Hwy., during the next week.

In action taken by the Coin Club at its last meeting, the group will maintain the collection of company-associated pins, medals, and emblems as a permanent project. The club has agreed to maintain the items on hand, add to the collection, and keep it available for showing on special occasions.

As it stands now, the display includes about three-fourths of the items which helped make it a prize-winning numismatic entry at the San Diego County Fair. Several of the pins have been returned to their owners, leaving a few blank spaces, said George Stewart, who has been spearheading the project.

Anyone who can provide pins and emblems of the past and furnish historical information related to the company's development is asked to contact Stewart on his home phone, 277-8636.

BASEBALL DRAWING SCHEDULED AUG. 21

Baseball fans at GD/Convair and GD/Electronics have one last chance at free tickets to Padres' home games through CRA.

Final drawing of the season will be two weeks from today, Wednesday (Aug. 21). Entries will be accepted until noon of that day at GD/Convair employee services.

Winners of the ticket drawing will have a chance to see one of the remaining home games: Aug. 23, 24, 25, Tacoma; Aug. 27, 28, 29, Spokane; Aug. 30, 31, Sept. 1, Seattle; Sept. 2, 3, Oklahoma City; Sept. 4, 5, 6, Hawaii.

Entry slips must carry name, clock number, department number, shift, location, plant phone extension. One entry per person is accepted.

Slips may be deposited in the baseball drawing box on the GD/Convair insurance counter or sent through in-plant mail to Baseball Drawing, Zone 3-20.

Competition Keen In Pistol Events

Results of CRA Pistol Club's July 28 matches saw Joe Williamson and Jim Halfacre swapping top spots in .22-cal. Police Course and Short National events.

Williamson (Dept. 401) was first in Police Course standings with 298 and second in Short National, 271. Halfacre (Dept. 140) topped the Short National list with 281 and was two points behind Williamson in the Police Course, 287.

W. G. Walker (Dept. 6) and Ralph Picard (GD/Electronics) traded the rest of the places in both events. Walker's rapid fire score of 92 barely broke a standoff tie for third in the Short National. Both Walker and Picard scored 258 and 2 bull's-eyes.

Picard was undisputed third in the Police Course with 275; Walker, fourth, 271.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

ARCHERY — Club shoot Sunday (Aug. 11), Balboa Park Field Range.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome.

CAMERA CLUB — CRA-ARA meeting Aug. 18, 7:30 p.m., Photo Arts Bldg., Balboa Park. Quarterly contest.

COIN CLUB—Meeting Aug. 15, 7:30 p.m., Convair executive dining room.

FENCING—Workouts and instruction each Friday, 7-10 p.m., Y.W.C.A., 10th & C Sts.

FISHING CLUB—Family barbecue Aug. 20, 6:30 p.m., Pecan Park. All General Dynamics families welcome to attend. Bring own food.

GARDEN CLUB—Joint CRA-ARA meeting tonight (Aug. 7), 7:30 p.m., Floral Association Bldg., Balboa Park. Joint Summer Flower Show Aug. 11.

GOLF—CRA tournament Aug. 10-11, Bonita Country Club.

GUN CLUB—Registered ATA trapshoot Aug. 18, Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children, 25¢.

PISTOL CLUB—Regular club shoot Aug. 11, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Aug. 8), 8 p.m., Harbor Drive headquarters.

ROAD RUNNERS — Weekend outing to Idyllwild, Aug. 19-21.

ROLLER SKATING — General Dynamics skate night Aug. 19, Skateland, Front and G Sts. Free tickets at GD/Convair employee services.

SOFTBALL — Plant league games Tuesdays and Thursdays, 6:45 and 8:20 p.m., John Adams Playground, 35th & Adams Sts.

SOLO FLYERS — Anyone interested in ground school course call Harold Ayer, ext. 2678, Plant 1.

SWIMMING — Family swim night Aug. 17, Mission Beach Plunge, 7-9 p.m. Free tickets at GD/Convair employee services.

WATER SKI CLUB—Weekend skiing on phone call basis. Call Jack Loos, ext. 1437, Plant 1.

Ride Club Members To Elect Officers

Riding Club members at GD/Convair and GD/Electronics planned an Aug. 1 meeting to nominate new club officers and to consider activities for the fall months.

Election will be held at the September meeting, first Thursday of the month, in Gillespie Field Clubhouse.

Tentative plans call for a one-day outing some time this month to Los Caballos Horse Ranch in the Cuyamacas and a family get-together at Gillespie Field Clubhouse later in the fall.

Solo Flyers Polled On Ground School

Plans are in the offing for a Solo Flyers ground school this fall if enough interest is shown by GD/Convair and GD/Electronics people wishing to earn their wings.

Harold G. Ayer (Dept. 6), club president, asks that everyone who would like such training call him on ext. 2678, Plant 1.

Sports & Recreation



NEW COMMISSIONER — Tommy Thomason, new CRA Riding Club commissioner, mounted on his champion quarter mare, "Cloudy Morn," at July 28 Open Horse Show where she won first in her class.

Former Riding Club President, Thomason Now Commissioner

V. V. "Tommy" Thomason has been named new commissioner of the CRA Riding Club, announced J. K. Field, manager of personnel services.

Thomason succeeds C. L. Pogorel, commissioner since 1958. Pogorel submitted his resignation with his transfer to GD/Astronautics.

A veteran horseman, Thomason has served as club president the last four years and been responsible for Riding Club activities and outings.

He is well known in horse show circles throughout the area, both as an exhibitor and judge. His quarter mare, "Cloudy Morn," holds the title of San Diego County Champion Trail Horse, recognized by the San Diego County Professional Horse Trainers Association.

She is shown in all recognized horse shows in Southern California and won first in the open trail horse class at the July 28 Open House Show sponsored by Morgan Horse Breeders and Exhibitors Association and A. J. Land Co. near Oceanside.

Thomason also owns a quarter gelding, "Miro Kid," a green-broke four-year-old.

The new Riding Club commissioner joined GD/Convair in 1950 and was a leadman in electronics section of inspection until he transferred to the production flight department in 1955. He now is flight electronics engineer on the 880/990 program.

GD/E Families Hold Bay Beach Party

More than 60 GD/Electronics people, their wives and husbands, gathered for an evening of fun at a beach party July 27 on Mission Bay's Santa Clara Point.

All are assigned to GD/E's new Ranger radar program.

In the get-acquainted affair, they enjoyed water sports—some skiing, others swimming, and still others visiting on the beach. After the potluck barbecue the GD/E group played a number of lively games and then settled down for a songfest.

Top Convair Archers Shoot In Nationals

Three bowmen of GD/Convair's Archery Club were in the running at the National Field Archery Association's annual tournament held at Enchanted Forest in the San Bernardino Mountains July 22-26.

Diane Vetrecin placed second in Women's Amateur Class and Frankie Smoot stood ninth in Women's Barebow Champ Class. Bob Lorch of Dept. 401-4 was fourth in Men's Freestyle Champ Class. Harry Ross of Dept. 400 also was among competitors.

According to Commissioner Al Phipps, Lorch shot the highest field round at the shoot which consisted of 56 field targets, 56 blackface hunter targets and 28 cardboard animal targets. Lorch's score was 988.

In the Men's Freestyle Champ Class, the shooting was extremely close, said Phipps, with only 28 points separating first and fourth places.



GD/E FUN TIME — At left, GD/E's Frank Devine and J. L. Brooks and wives watch fun at Ranger beach party July 27. At right D. A. (Doc) Graybill, in eye-catching serape, enters with vim into swing stick game with Jo Ann Kranz.



SPACE VEHICLE — Walt Nowell (Dept. 311-0) of GD/Astronautics caught this rare scene of missile passing over San Diego July 18 and leaving brilliant wake. Air Force acknowledged launch of Atlas/Agena combination from Point Arguello. Missile was moving right to left. Experts say sun reflecting off rocket exhausts made teardrop shaped wake. Before missile reached certain altitude, exhaust was seen in form of extremely bright contrail, at right. Nowell hand-held a Retina 2A camera set at F-2 with a one-tenth-second exposure. This was rare occasion with combination of launch, sunrays, clear skies to make actual missile flight visible.

Kahla Shifted To Post in NY

B. W. Kahla has transferred from General Dynamics/Convair to the Corporate Office at New York in the office of A. A. Hendrix, vice president-industrial relations.

Kahla, who has held the position of chief of systems and procedures at GD/Convair since early 1962, will report to J. L. Budros, Corporate director of compensation and personnel development.



B. W. Kahla

A native of Texas, Kahla joined the company at Fort Worth Division in 1949 in manufacturing engineering. At the time of his transfer to GD/Convair last year he was deputy value control coordinator, reporting to the industrial engineering manager.

He has been extremely active in value engineering activities, serving as first president of the San Diego Chapter of Society of American Value Engineers (SAVE) during the current year.

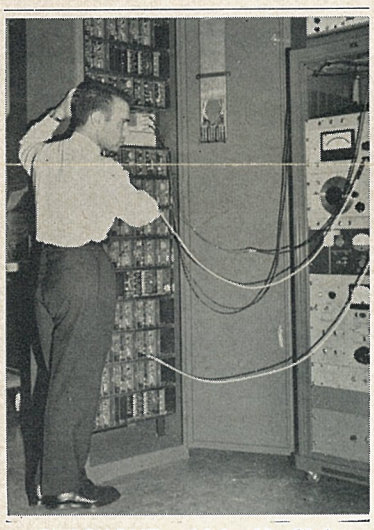
Kahla served in the U. S. Army as personnel officer during the years 1941 to 1945, holding the rank of captain upon his discharge. Following his army service he continued his education at the University of Texas, Austin, where he received his bachelor's degree in business administration.

H. L. Henrie has assumed the duties of chief of systems and procedures at GD/Convair in an acting capacity.

Larry Brandvig Dies; Veteran GD Pilot

Larry C. Brandvig, GD/Convair pilot, died July 18 after being stricken two months ago in Caracas, Venezuela, where he was on assignment with Viasa Airlines in support of Convair 880-Ms.

Brandvig joined the company at San Diego in 1943 as a flight engineer. He transferred to the Fort Worth Division in 1949. During his seven years there he was pilot on the B-36 during production test and experimental phases. Since his return to GD/Convair he had been production flight pilot and instructor on Convair-Liners, T-29s, 880s and 990s.



CHECKOUT—Alvin H. Siniawsky of Stromberg-Carlson operates 711 multiplex system that will be heart of Colorado River Storage Project's microwave system.

MICROWAVE NETWORK TASK GOES TO S-C

Stromberg-Carlson division of General Dynamics is at work on a $2,278,364 contract from the Bureau of Reclamation to install a microwave network to control hydroelectric power flow generated by the Colorado River Storage Project.

Work covers the complete multi-channel radio system which will span five states, extending from Cheyenne, Wyo., to Phoenix, Ariz. S-C's new 711 multiplex system will make possible 120 high-quality voice and data channels and permit future expansion to as many as 240.

S-C will survey the route, install equipment and supply one year service.

GD/E at Rochester Wins Radio Contract

A letter contract for slightly more than $4 million for single sideband communications equipment was awarded to General Dynamics/Electronics-Rochester in June by the U. S. Navy's Bureau of Ships.

The contract calls for production of more than 300 sets of the AN/WRC-1 transceiver, and more than 1,000 separate R-1051/URR receivers.

GD/E Computer Display Console Will Operate With Univac 1107

Case Institute of Technology in Cleveland, Ohio, has purchased a GD/Electronics-San Diego computer display console and related electronics for a series of unique computer applications.

The display system, the S-C 1090, will be installed at the Institute's computing center, where it will operate with a Univac 1107 computer.

In one project the display will be used in simulation of teaching machine techniques. Test situations and questions will be presented by a computer on the face of the display's 19-inch cathode ray tube. Using a typewriter keyboard device, the student will relay his answer back to the computer which scores the test and presents the proper answer on the display screen.

The display also will be used for scientific analysis of handwriting. In this application, an operator will write on the face of the tube with a pen that writes with light. The computer converts information from the pen and the display into a digital code. The code can then be analyzed to determine differences in handwriting.

In addition, the display will serve as a method for making corrections in a computer program while the machine is making its calculations, and also will be used to study the advantages of receiving computer output data at locations remote from the computer center.

GD/Electronics is supplying the S-C 1090 console, the light pen, and a vector generator, which allows the display to draw straight lines between any two points, and the necessary electronics for interface between the display system and the computer.

Navy Buys Console For New ASW Work

General Dynamics/Electronics San Diego has sold a special airborne display console to the Navy for use in development of new anti-submarine warfare techniques.

The electronics situation display, a modified S-C 1090 Direct View Display Console, was purchased by the U.S. Naval Air Development Center, Johnsville, Pa., which functions under the direction of the Bureau of Naval Weapons.

The Anti-Submarine Warfare Laboratory of the Naval Air Development Center will use the display as a prototype within the design of a new avionics system for sub-killer aircraft. This system is a vital part of the Navy's revolutionary A-NEW program.

GD/Convair Receives $768,000 Extension

General Dynamics/Convair has received a $768,000 follow-on order from North American Aviation for additional guidance housing assemblies for the Minuteman missile.

The current order, announced last week, increases the value of GD/Convair's guidance housing program to more than $1,275,000 and will extend work throughout 1964.

The orders have been placed with GD/Convair by the Space and Information Systems Division of North American Aviation, which is doing the guidance housing work for the company's Autonetics Division. The latter produces the guidance and control equipment for the Air Force's Minuteman ICBM as associate prime contractor.

Phone Switchboards Will Go Overseas

Contracts for three telephone switchboards for overseas installations have been awarded to Stromberg-Carlson by U. S. defense agencies.

Two of the switchboards are for use in Korea, where they will serve as telephone exchanges for Air Force bases. Both are 600-line boards. This contract was awarded by the Rome Air Materiel Area.

The third switchboard is a 400-line exchange which will serve Libertador Air Force Base at Maracay, Venezuela. This contract was awarded by the U. S. Army's Electronic Materiel Agency.

Electric Boat Team Scrutinizes FW's Value Control Techniques

A General Dynamics/Electric Boat division personnel development team was busy the past two weeks at GD/Fort Worth on a project aimed at making best use of dollars spent to build the supersonic F-111 tactical fighter aircraft.

Not that Electric Boat, with its rich historical past and its up-to-the-minute present and future devoted to submarines, plans to enter the aerospace business.

"But GD/Fort Worth is recognized for its value control program," said Paul Mili, EB director of personnel development.

"So, we're here to study value control techniques as practiced at GD/FW and to identify the methods found most effective in applying them," he said.

"When we get back to EB, we plan to use whatever new ideas we have acquired."

(Electric Boat itself is in the van of Dynamics divisions which have been active in value control efforts. A small but effective organization has been in being since 1956.)

To obtain a complete indoctrination in Fort Worth division's program, Mili and three other team members took regular assignments in Fort Worth's 23rd consecutive two-week value control seminar.

Other EB men were Frank Kohrs, manager of the EB value engineering section; Walt Nowak, EB procurement value analyst; and Dan Prescott, engineering value specialist.

They joined 40 other GD/Fort Worth and Air Force participants who concentrated on value studies of parts whose functions, or similar functions, are required in the F-111. The object in each case: to come up with the most economical answer possible that would meet all requirements, including performance, reliability, safety, and maintainability.

The work of the latest seven seminar teams was coordinated by Project Leaders W. R. Ellis of Dept. 23, C. C. Barbieri of Dept. 160, and Doug Stone of Dept. 4. Overall program planning and coordination was handled by Rand Creasy, deputy division value control coordinator, and Bill Nutt, value control coordinator for educational services section.



EB STUDIES FW — GD/Electric Boat division team on duty assignment at GD/Fort Worth gets special value control briefing from C. C. Barbieri (second from left), F-111 design engineer of FW Dept. 160. Left to right: W. M. Nowak, EB value analyst; Barbieri, Paul Mili, EB director of personnel development; D. R. Prescott, EB value engineer; and Frank Kohrs, EB manager of value engineering.

Heckman and Gower In New S-C Posts

Richard S. Heckman has been named manager of employee relations, and Robert B. Gower, wage and salary administrator in Stromberg-Carlson's industrial relations department, according to Murray T. Bass, director of industrial relations.

Heckman joined S-C division of General Dynamics in 1957 as personnel manager. In recent years he has been responsible for labor relations.

Gower first joined the Corporation in 1954 and spent six years at GD/Fort Worth and nearly two years with GD/Astronautics in industrial relations before transferring to S-C in 1962.

Brochure Published By Liquid Carbonic

A complete guide to carbon dioxide and its industrial application, published by Liquid Carbonic Division of General Dynamics, is now available to industries without charge.

The 32-page brochure, "What is CO_2?," is sixth in a series of industrial gas data books issued by Liquid Carbonic. Others deal with oxygen, nitrogen, argon, hydrogen, and acetylene.

Any of the data books may be obtained by requests to Dept. GDN, Liquid Carbonic Division, General Dynamics Corporation, 135 S. LaSalle St., Chicago 3.

Clark Jung Joins Corporate Office

Clark R. Jung has been transferred from Liquid Carbonic Division to the General Dynamics Corporate Office in New York City, where he reports to Paul Hickman, manager of special products.

A native of Milwaukee, Jung attended secondary schools there and matriculated at Northwestern University where he received his BS in commerce in 1952. He joined the State Department the following year and served as overseas officer until going to Liquid Carbonic in 1959 as assistant to the president. His duties involved extensive travel in connection with national marketing, and liaison with other divisions.

GD
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$400,000 Design Task Awarded

General Dynamics/Convair has been awarded a $400,000 study and design contract which will lead to development of expanded range instrumentation to be installed in Florida for space launch and weapon systems testing over the Atlantic Missile Range.

The award, part of the Air Force Systems Command's program, was made by Pan American World Airways, Inc., Guided Missile Range Division, Patrick Air Force Base, Fla. Pan American World Airways is prime contractor for operation and maintenance of the Atlantic Missile Range.

Under the subcontract's first phase, GD/Convair electronics and instrumentation engineers will formulate the detailed engineering design required to integrate telemetry receiving, digital and analog equipment, and recording equipment within a new three-story building at Merritt Island, across the Banana River from Cape Canaveral.

GD/Convair also will develop remote control and display systems that will permit switching of equipment from several operator positions during missile countdowns and launches.

Heading TEL-4, as the program is known, is W. T. Dorrance, GD/Convair manager electronic systems, with Dave Kahler, deputy program manager-engineering.

Other key personnel involved in GD/Convair's development responsibility are L. R. McClain, technical group engineer, and R. F. Myers, group engineer-documentation.

Dorrance and Kahler headed up the dozen or so senior electronic and instrumentation engineers responsible for putting the program proposal together this spring. There are now nearly 20 engineers assigned to the project with the number expected to increase to 35 at peak of the workload this fall.

Work under the first phase will extend through January, 1964.

Satisfactory completion of the initial phase would lead logically into the second phase of fabrication and installation of equipment at the Florida station, say GD/Convair engineers in charge.

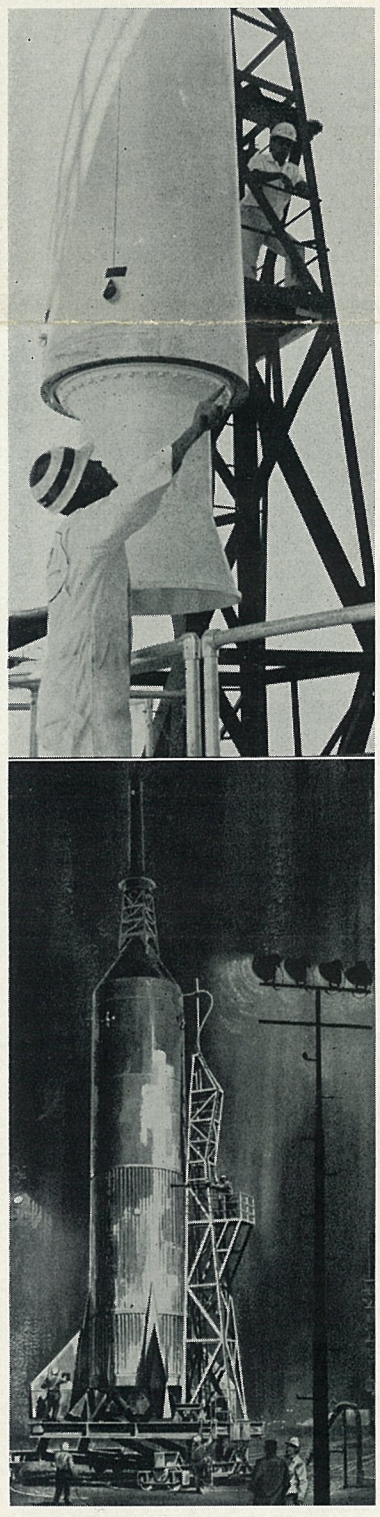
More than 300 large racks of government-owned electronics equipment will be housed in the 125 x 125-ft. building at Merritt Island.

In addition to integrating this equipment into a remote control telemetry signal patching system, GD/Convair would design a master coordinator's console, launch coordinators' consoles and a master display board.

The master display board will be a visual aid showing the status of equipment assignments, listing such information as type of equipment assigned, equipment available but not assigned, and available but not calibrated.

Under the program's first phase, GD/Convair will integrate a similar, but smaller, telemetry station at Vero Beach, Fla.

For the task, GD/Convair will be drawing upon its more than 20 years' experience in electronics systems integration. Currently the division is designing and installing all electronic and instrumentation systems for the Little Joe II launch vehicle, which will be used for testing of space hardware in the Apollo program. It also is performing electronic systems integration tasks for other General Dynamics divisions.



READIED FOR FLIGHT — In upper shot Duncan Guest of GD/Convair Dept. 311 directs hoisting of Aerojet Algol motor for installation in Little Joe II launch vehicle at White Sands Missile Range, N.M. Below is artist's drawing of GD/Convair-built vehicle as it will look on launcher before initial firing which will be in near future.

Space Metal Study Under Way at GD/FW

Ways to increase the density and strength of metals to make them more suitable for space hardware of the future are now being studied at General Dynamics/Fort Worth.

The work is being done under a new $200,000 contract from the Aeronautical Systems Division of the Air Force Systems Command.

R. K. May, chief of applied manufacturing research and process development, said that investigations will include use of high-energy-rate techniques such as Dynapak and Dynaform.

With these processes, for example, engineers will study fabrication of tungsten parts by slip-forming.



ROLL-OUT NEARS—C-141 airlifter, built by Lockheed-Georgia at Marietta, Ga., is scheduled for roll-out this week. GD/Convair builds empennages for military troop-cargo carrier.

Women Taking Value Training

A value control task force went into action at GD/Convair the last couple of weeks as one function put in a request for individual value vs. cost training.

H. B. Day, supervisor of graphic reproduction, is sending 12 of his people to an accelerated indoctrination to give them the basic principles governing value at the least cost of both material and manpower.

H. P. Williams, manager of value control, divided the group into two sections. Each is spending two hours a day for four days in class. They are focusing their attention on an actual project from their own department—better means of streamlining records which keep track of the performance of people and of the multitude of jobs going through the reproduction operations.

The three or four women tabbed to attend are the first of their sex to have a chance to take GD/Convair value control training. They are lead women in the graphic reproduction section.

More Missile Warships For U.S. Navy Launched

Two Navy ships to be armed with GD/Pomona-built missiles were launched last month—one on the East and one on West coast. Each is first of its class.

The 547-foot USS Belknap (DLG-26), longest ever to be launched at Bath Iron Works, Bath, Me., will be armed with Advanced Terrier missiles.

Mrs. Leonard B. Cresswell, daughter and granddaughter to the late RAdm. Reginald Rowan Belknap and RAdm. George Eugene Belknap, for whom the vessel is named, sponsored the 7,900-ton guided missile frigate.

RAdm. Robert H. Speck, commander, cruisers and destroyers, Atlantic, was principal speaker and reminded that the Belknap is the first of a new class of missile frigates—the third class of frigates to be built by the Navy in response to increasing technological changes. Admiral Speck revealed that the Navy hopes to complete fitting out on the Belknap in time to have another active ship of the line early in 1965.

USS Brooke (DEG-1), the first destroyer escort to be equipped with Tartar missiles, was launched at Puget Sound Bridge and Dry Dock Co., Seattle, and will join the fleet following commissioning scheduled early in 1965 at Puget Sound Naval Shipyard.

Principal speaker at launching ceremonies was RAdm. Frank Virden, USN, commander, cruisers and destroyers, Pacific. The first of three missile-armed destroyer escorts to be built at Seattle, USS Brooke is approximately 414 feet long, has a beam of 44 feet and displaces 3,400 tons.

GERMAN OFFICIALS STUDY GD/CONVAIR SATS MATS DESIGN

GD/Convair's landing mat concept, developed for the SATS program, was included among other matting designs and installations on the recent itinerary of a German military inspection team.

Dr. Alex Wolff, Military Technology Division (Ground Support Equipment) and Lt. Col. Emil Siegert, both from Bonn, Germany, visited the GD/Convair plant late last month.

They are devoting their time to evaluation of matting configurations which might prove compatible with German aircraft. Prime purpose of their trip was to observe all work being done in this country on landing mat systems.

GD/Pomona Practices 'Good Neighbor Policy'

"In our 12 years in this valley we at General Dynamics/Pomona have established a reputation of being community service minded," C. F. Horne, president said. "As individuals we have been associated with many different community activities.

"I am proud that we have given so generously to our communities and subscribe to the belief that the Division should encourage its employees to be civic minded.

"We have an obligation to see that this tradition continues."

★ ★ ★

A good neighbor policy is practiced by scores of General Dynamics/Pomona employees through their participation in community activities.

A survey recently completed shows that the volunteer work done by Pomona division employees covers the broad fields of church, school and state; city and county; youth; and the arts.

Employees help to make their communities better places in which to live by volunteer service in civic government, church and youth work, cultural organizations and educational systems.

Their free-time service ranges from school boards to Scouting, teaching to typing, acting to advising, coaching to collecting, singing to supervising. Hospital boards, church choirs, police and fire auxiliaries, symphony orchestras and art associations claim

(Continued on Page 2)



GERMAN VISITORS—Dr. Alex Wolff, right, and Lt. Col. Emil Siegert, left, from Bonn, Germany, are snapped in GD/Convair SATS mats production area with Vern Sharp, chief plant engineer, during recent inspection tour.

GD/Pomona Practices 'Good Neighbor Policy'

(Continued from Page 1)

General Dynamics employees as members.

The city of Claremont offers perhaps the most perfect example of the way in which employees of the company have contributed time and talent to community activities.

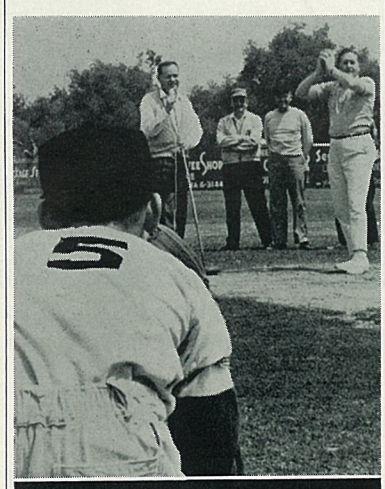
A nationally known educational center, this small (approximately 16,000 population) city has more colleges—six already established and construction soon to begin on a seventh—than any other town of comparable size in the United States.

The many GD/Pomona employees living in Claremont devote much of their leisure time to activities that help maintain the town's reputation as an ideal place in which to live and learn.

The most dramatic evidence of impact that Pomona Division employees have on their hometown is in the field of civic government. K. G. Beyer, manager of engineering personnel and training, is serving his first term as mayor. A member of Parks and Recreation Commission before being elected to the city council and subsequently chosen mayor, Beyer has also served as moderator and senior deacon for Claremont Congregational Church and was on the board of directors of Visiting Nurse Association. He is also a member of the executive committee of Los Angeles County Committee of Mayors.

A city councilman serving with Beyer is Mrs. L. E. Spear, wife of the vice president-plans and programs. Spear is a former member of Board of Architectural Review but resigned when his wife was elected to the council last year.

Other GD/Pomona employees active in Claremont city government include C. D. Cornell, assistant to the president, who is current chairman of the Board of Architectural Review; E. F. Drake, supervisor quality control data processing, and Jack Mason, director of engineering, members of Planning Commission; M. J. Grothe, design specialist, chairman of Parks and Recreation Commission.







IN THE SWIM—Reading from top down: (1) Mayor Ken Beyer (Dept. 3) throws out first ball to signal official opening of Little League season in Claremont. League President Jack Sloan (Dept. 2) at microphone.

(2) Tony Nigliazzo (Dept. 6) is now captain in Claremont Police Reserve.

(3) Lou Nitti (Dept. 21) puts finishing touches on toy soldiers he designed for children's Christmas party at church.

Astro Creates Nuclear Section

GD/Astronautics added an "Atomic Age" capability recently with establishment of a nuclear technology section (Dept. 528-4) under Vice President W. W. Withee in his capacity as chief engineer-propulsion (acting).

Directed by Dr. Walter K. Stromquist, the new group is charged with establishing and maintaining the division's capability in nuclear technology.

Services of its staff of 10 engineers and physicists are available for technical assistance to any portion of GD/Astro's engineering organization.

"Establishment of this section provides GD/Astro with an added institutional capability to support engineering programs both with specific technical knowledge, and with an understanding of the framework in which this knowledge is to be applied," Withee said.

Principal activities of the group include systems design and analysis for nuclear engine stages and auxiliary power systems; provision of data and design support for other systems and components affected by nuclear and space radiation environments; analysis of nuclear hazards and radiological safety; and support for test specifications and testing technique development as related to radiation experiments.

Typical of nuclear technology's work is a current project in which the group is developing a computer code to predict radiation within a space vehicle during its passage through artificial and Van Allen radiation belts.

The task is being accomplished by E. L. Noon, senior research engineer, and O. L. McDermed, research engineer.

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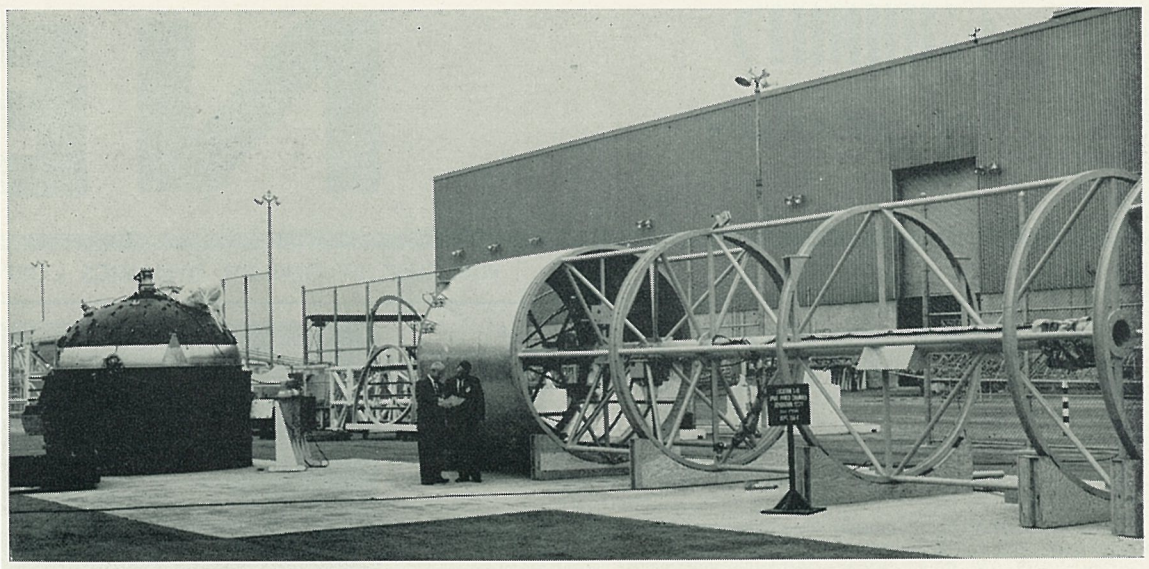
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READY FOR TESTS—Astronautics turned out "whalebone" Atlas vehicle, right, to be mated to simulated Centaur vehicle, rear, and put through separation test in space environmental chambers at NASA's Lewis Research Center. Test Conductor W. J. Christman and T. R. King, engineering test support foreman, look over final plans prior to shipment of units to Cleveland.

Dynamics Men Active in SAVE

General Dynamics men dominate the slate of officers elected recently by San Diego Chapter, Society of American Value Engineers (SAVE).

A. S. Freedman, GD/Electronics manager of design assurance is president; M. D. Weisinger, GD/Convair, secretary; G. J. Bartolomei, GD/Astro, treasurer.

The group, organized about two years ago, now boasts a membership of nearly 70, of which two-thirds are General Dynamics employees.

Appointed to head local SAVE committees for the coming year are GD/Astro's E. A. Lindem (program), S. L. Albert (publicity), Frank Urban (membership), Wells Christie (rules and bylaws).

Bill Garrett of GD/E is chairman of the ticket committee, and a publications group is headed by A. R. Hermann of GD/Convair.

San Diego SAVE chapter is open to all interested persons, and membership is not restricted solely to professional value engineering personnel.

E. D. Heller, manager of value control at GD/Astro, is director for SAVE's southwest region, and was former SAVE national secretary.

Exch. Student

Another Son Goes Abroad

GD/Convair son, Bryan Cheney, climbed on a bus a week or so ago to follow the route blazed three years ago by his brother, Carl, as he heads to Germany.

Both boys, sons of Harold Cheney, Little Joe II deputy program manager - launch operations at GD/Convair, now have been selected as exchange students through the American Field Service program.

Carl, now in Italy under the Stanford Overseas Campus program, spent several months with an Aachen, Germany, family. Bryan will have a full school year at the Hugo Junkers Gymnasium at Munchen-Gladbach, just 30 miles from Aachen.

Bryan, 17, will be trading some of the highlights of his senior year in high school for the experience of living in another country. He had to give up his post as vice president of Grossmont High student body for the coming year and will miss the excitement of graduating with his senior class.

But, he feels that is a small price to pay for the new friends he will make and the understanding he will get of the German way of life and education.

QC ENGINEERS TAKE COURSE

Robert D. Woodward, GD/Astro senior quality control engineer, and Maynard A. Wolfe, asst. test lab group engineer, were among 229 recent participants in an industrial reliability and statistical methods course conducted by UCLA.

Centaur Testing Slated at LERC

J. E. Lauen, chief of LERC test operations, coordinates all Astro test activities and support at Cleveland.

G. G. Christ, test conductor, will guide efforts involving Atlas vehicle dynamics tests and Centaur vehicle environmental tests. C. H. Lauback and W. J. Christman of engineering test laboratories are heading Atlas/Centaur separation tests. Crew members for each of the three major programs hail from various functions and organizations involved.

Two programs center in space environmental chambers created by LERC following extensive updating of a former high altitude wind tunnel.

One cylindrical chamber, 30 by 100 feet, is topped by a dome some 22 feet in diameter and 20 feet high. This dome provides access required to lower the Centaur vehicle into the chamber and position it upright. In operation the chamber duplicates conditions found 90 miles above the earth, including vacuum and thermal radiation. In this environment Centaur electrical and mechanical systems will be operated in simulated missions. As presently planned, only propellant flow and engine ignition will be excluded.

The Centaur test vehicle was flown here from Cape Canaveral where it has served other test and validation purposes.

The second chamber is "L"-shaped, measuring from 30 to 50 feet in diameter and 300 feet in length. It can duplicate atmospheric conditions found at 100,000 feet and will be the only facility of its type in which Atlas/Centaur separation tests can be performed.

During tests, separation rockets will be fired and the mating section of the Atlas propelled away from the Centaur stage exactly as this will take place in space. The tests will help verify the system's ability to effect a clean separation during actual missions.

At nearby Sandusky, site of LERC's Plum Brook Station, a modified Atlas space launch vehicle is being installed in a special dynamics research test stand.

This vehicle, Atlas 116-D, is also a veteran of Cape Canaveral tests. It was returned to Astronautics and in three and one-half weeks modified and checked out for duty here. Modifications included the removal of engines and most airborne systems and the installation of other required items to fit test tower configurations. This work has earned praise for those who took part since it was accomplished on an accelerated basis and under unusual conditions; for instance, the need to design, fabricate and install special one-of-a-kind components to make the job possible.

During dynamic and static-type testing a complicated system of stanchions and cables will apply crushing forces to the Atlas similar to those encountered in flight.

GD/Pomona Trio To Give Papers

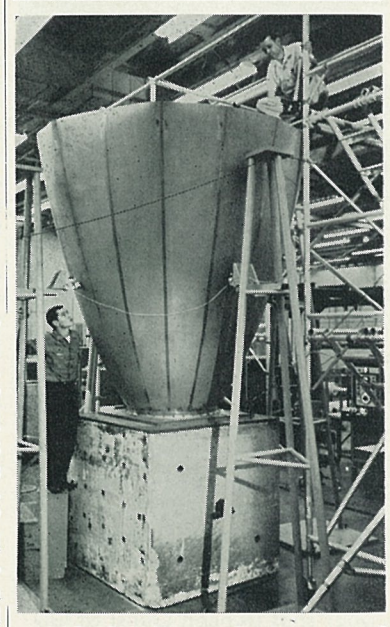
Engineering personnel at GD/Pomona will present papers and speeches to various regional and national meetings of professional groups in the next two months.

K. L. McIntyre, senior dynamics engineer, will present a paper entitled "Vibration Testing During High Heat Rates" at a symposium on aeroelastic and dynamic modeling technology to be held at Wright-Patterson Air Force Base, Ohio, Sept. 23-25. Symposium is jointly sponsored by Aeronautical Systems Division of U. S. Army and Aerospace Industries Association of America.

Mrs. Rebecca Sparling, Mauler technical analysis group, will speak at Western Regional meeting of National Association of Corrosion Engineers scheduled for last week in September at Anaheim, Calif. Mrs. Sparling's talk is entitled "Corrosion Prevention at the Drawing Board."

In October Mrs. Sparling will speak on "Women in Engineering" at National Conference on Women in Engineering sponsored by University of Southern California and the President's Office of Emergency Planning. Conference will be held on USC campus, Los Angeles.

E. E. Honeywell, preliminary design group, will present a paper, "Manned Anti-Satellite System" at eighth symposium on ballistic missile and space technology, Oct. 15-18, San Diego.



BIG SHAKE — Environmental test facilities at GD/Pomona permit evaluation of prototype hardware in potentially critical environments during earliest design stages. John Haynes, left, and K. H. Strathman of GD/Pomona engineering structural test laboratory check instrumentation prior to vibration testing of experimental rocket motor extension skirt. Work is being done for Aerojet-General Corp. at Azusa as part of Apollo program.

With Our Deltas

Pilot and F-106 Pass 1,000 hrs., Same Flight

A pilot of the 456th Fighter-Interceptor Squadron, Castle AFB, Calif., Capt. Ervin W. Barnes, became the first Air Force man to log 1,000 hours in the Convair-built F-106, and his plane was the first F-106 to pass the mark. It was reached on the same training mission.

Capt. Barnes started piling up hours in the Convair jet interceptor late in 1959 after checking out in the F-106 at Castle. It took about 750 missions for him to reach the record. The bulk of the hours were logged in other F-106s, but both the record-breaking pilot and plane probably will be teamed on future training sorties.

Following his historic flight, he was greeted by Lt. Col. John H. Rogers, who recently became commander of the 456th, and GD/Convair and Hughes Aircraft Co. technical representatives.

Charles W. Stevens, field service rep. for GD/Convair, presented Capt. Barnes with a set of cuff links and a tie clasp with engraved membership in the "1,000 Hour Club," a club with but one lone member so far.

* * *

James W. Day, GD/Convair field service representative, recently was awarded the Air Defense Command Commendation Certificate by the Commanding General of the New York Air Defense Sector for his four years' service with the 539th Fighter-Interceptor Squadron, McGuire AFB, N. J.

The citation accompanying the award cited Day for his "technical knowledge and outstanding devotion to duty, which aided materially in the successful scheduled completion of the F-106 Category III testing, and in the successful completion of two major F-106 modification programs since its acceptance by the Air Force."

He was credited with helping the 539th FIS attain a steadily increasing operationally ready rate while supporting an increased flying hour program.

"He reflects considerable credit on the General Dynamics Corporation and has contributed greatly to the high reputation of the organization and the New York Air Defense Sector," the citation concluded.

* * *

Ten Convair-built F-106 jet interceptors have been assigned to Elmendorf AFB, Alaska, in a temporary deployment to strengthen northern defenses. The 317th Fighter-Interceptor Squadron at Elmendorf has been equipped with F-102s since 1957.

Pilots of the F-106 contingent are all members of the 325th Fighter Wing, McChord AFB, Wash. Lead aircraft in the mid-July flight north was piloted by Lt. Col. Eugene L. Surowiec, whose 498th FIS was transferred to McChord from Geiger Field.

The McChord reinforcements are assigned to the joint Alaskan Command under Lt. Gen. George W. Mundy.



Reading from the top down: (1) Brig. Gen. F. W. Gillespie, 86th Air Division commander, receives F-102 lapel pin from O. B. Johnson, GD/Convair field service rep, following checkout in interceptor at Ramstein Air Base, Germany. In center is Lt. Col. Gordon H. Scott, 526th FIS commander.

(2) Capt. Ervin W. Barnes received "Thousand Hour Club" membership from Lt. Col. John Rogers, 456th FIS, commander, after both he and his F-106 passed mark. At left is Charles W. Stevens, GD/Convair rep at Castle AFB; at right is Lee Williams of Hughes Aircraft.

(3) GD/Convair field reps J. E. Dodge, left, and H. P. Vinz, right, renew acquaintance with Maj. Gordon Reese at Camp New Amsterdam, Netherlands, recently when he reached 1,000-hour mark in F-102.

(4) GD/Convair's Jim Day is assisted by Lt. Col. Duncan C. Myers, commander of 539th FIS, in hanging award Day received in recognition of service with F-106 squadron.

GD/Convair Art Chief Designs Panorama For NY World Fair

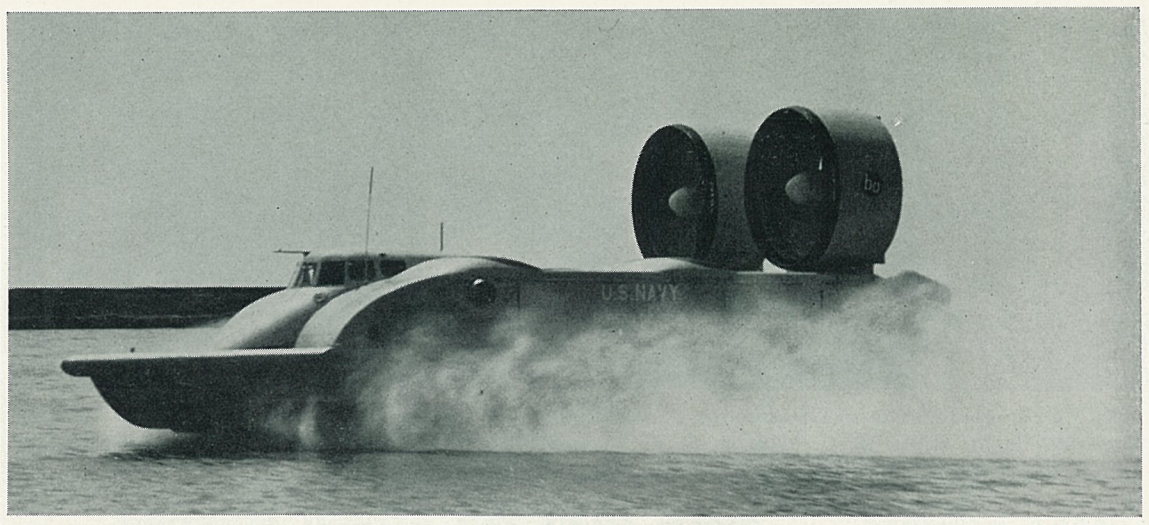
A dramatic panorama of historical scenes, highlighting the past, present, and future of the United States, designed by P. J. Fitzgerald, supervisor of art and editorial section at GD/Convair, may be included in one of the attractions at next year's New York World's Fair.

Three-dimensional environments for a 15-minute ride through the country's history were sketched and designed by Fitzgerald at the request of Cinerama Camera Corp., in charge of the feature under a Dept. of Commerce contract. The attraction will be called the United States Pavilion.

First navigators, sea monsters, discovery and settlement of America, early inventions, development of communications and transportation, and projection into the future realms of space are graphically portrayed in the march of history.

Scenery will cover the entire four walls of the ride enclosure. Each side will be 335 feet long and 35 feet high.

Fitzgerald was assisted by Roger Magee of Magee-Bralla, Inc., San Diego design firm, in construction of the ¼-scale models submitted for approval.



AN AIRY RIDE—Electric Boat division of General Dynamics built four lift fans for this Hydroskimmer, shown riding an air cushion 18 inches above Lake Geneva, N.Y. High speed experimental craft was built for Bureau of Ships by Bell Aerosystems of Buffalo, N.Y.

FRENCH 'SPEAKING' COMPUTER LEASED

General Dynamics/Electronics —San Diego has leased an S-C 4020 High Speed Computer Recorder to the Commissariat a L' Energie Atomique, Paris, France.

Delivery is scheduled for October.

In Paris, the S-C 4020 will "speak" French. Since the French alphabet is the same as the English, no changes will be made in the standard character set built into the recorder. Results will merely appear in the French language on the face of the CHARACTRON^R Shaped Beam Tube.

Earlier this year, Great Britain's United Kingdom Atomic Energy Authority leased an S-C 4020 unit—the first such system in Europe.

In addition to many industrial S-C 4020 users, units are now in use by the following governmental organizations: Applied Mathematics Laboratory, David Taylor Model Basin, Carderock, Md.; Los Alamos Scientific Laboratory, Los Alamos, N.M.; North American Aviation, Los Angeles, Calif.; GD/Astronautics, San Diego, Calif.; Jet Propulsion Laboratory, Pasadena, Calif.; National Aeronautics and Space Administration, Huntsville, Ala.

Heller Named To Value Panel

E. D. Heller, General Dynamics/Astronautics manager of value control, has been invited to serve as a regional panelist at the joint Department of Defense-National Security Industrial Association symposium in Los Angeles next month.

The session at Los Angeles' Biltmore Hotel, Sept. 18, is one of five such symposia scheduled this month and next at major U. S. industrial centers.

Purpose of the meetings is to present Defense Department policies and objectives, and industry's views and experience in the utilization of value engineering as a systems management tool.

Assistant Secretary of Defense Thomas D. Morris heads an impressive list of speakers participating. Taking part as an industrial panelist at all sessions is C. W. Doyle, procurement value control administrator, GD/Fort Worth.

EB Hiring, Goes To 9 Hr. Shift

Most production employees at General Dynamics/Electric Boat went on a basic nine-hour shift this week in order to meet revised submarine delivery schedules.

The shipyard will also hire additional skilled shipfitters, welders, outside machinists, outside electricians, sheetmetal workers.

In announcing the basic nine-hour shift, J. William Jones Jr., Electric Boat president, said a review of immediate and long range production schedules and a careful assessment of the changes ordered by the Navy and their impact on delivery dates showed an "urgent need to increase productivity in order to meet the revised schedules."

'Station Keeper' Designed by GD/E Aid to Aircraft in Formation

A new radar system designed by General Dynamics/Electronics —San Diego can pinpoint exact position of aircraft flying close formation in all kinds of weather, or at night.

The Aircraft Station Keeper (ASK) radar system automatically provides position data over a full 360 degrees around the aircraft and gives each aircraft using the system a pictorial display of all other aircraft within the formation.

The compact, low-power system is essentially a combination of transceivers and display devices installed in a "cooperating" aircraft. The two units which make up the system will occupy only 1/4 cubic feet of space, weigh 16 pounds, and have a power drain of 50 watts.

ASK is designed for use in all types of military aircraft, including helicopters and supersonic jets and will handle 10 or more aircraft depending upon formation pattern, explained J. B. Gehman, GD/E engineering staff specialist who has spearheaded development. Gehman is presently acting project engineer for the ASK system. Marshall Bear of engineering research has been associated with Gehman on the program.

In addition to position data, the technique can be used to provide information for takeoff, landing, and in-flight rendezvous where a zero range measurement is an important feature. Altitude reference also can be included.

Radar specialists at GD/Electronics indicate the ASK system has a substantial growth potential, since the system is expandable for automatic operation when used with an autopilot.

GD/E Projects at San Diego Demonstrated For Navy Team

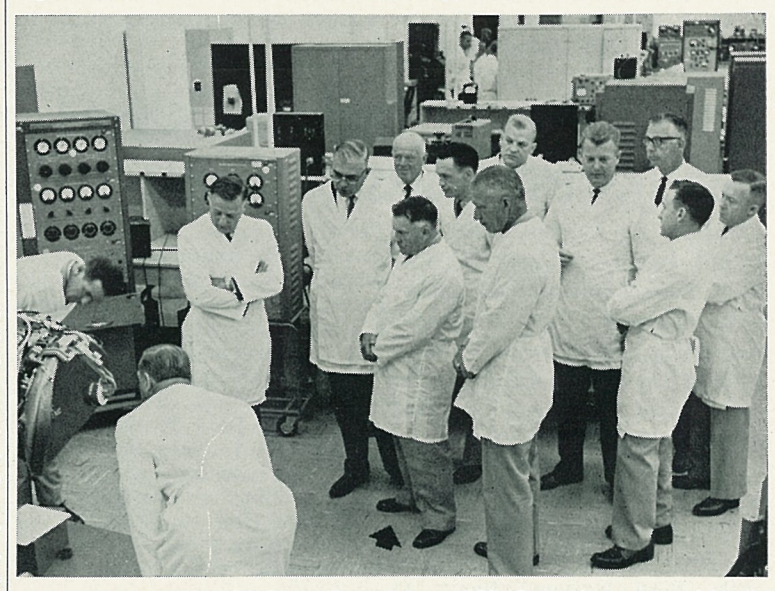
High ranking Naval officers received a one-day briefing on products and capabilities of particular interest to the Naval Air Force at both San Diego facilities of General Dynamics/Electronics the first of this month.

Vice Adm. P. D. Stroop, USN, commander, Naval Air Force, Pacific, headed the visiting team. Others were Capt. N. R. Richardson, USN, deputy, Bureau of Naval Weapons Fleet Readiness Representative, Pacific; Capt. B. K. Beaver, contract support officer, staff, BUWEPSFLT READ REP PAC; W. S. Burlem, chief engineer, engineering division, staff, BUWEPSFLT READ REP PAC; Cdr. R. A. Evans, BUWEPSREP, San Diego; Cdr. E. Frankiewitz, assistant BUWEPSREP; Lt. Cdr. J. D. Ness, operations, CIC, CCA, ECM, training officer, staff, COMNAVAIRPAC; Lt. Cdr. W. H. Todd Jr., technical supervisor, instruction team, staff, COMNAVAIRPAC.

GD/E General Manager John L. Lombardo outlined the division's functions at the general conference preceding briefings on specific projects now under way at both Plants 1 and 2.

Such newly-developed research and engineering projects as Aircraft Station Keeper Radar, Short Pulse Radar, Terrain Following Radar systems at Plant 1 and data products, and their Naval applications, at Plant 2 came under scrutiny. The Naval team toured assembly areas at both plants during the afternoon.

GD/E men conducting the briefings and tours included J. L. Brooks, J. B. Gehman, R. R. Apgar, J. H. Thompson, D. C. Newlon, R. F. Schillinger, A. H. Wisdom, J. C. Mitchell, J. H. Redman, J. W. Colvin, J. G. Melvin, C. V. Shannon, R. A. Glaeser, J. N. Mac Innes, requirements engineer-Navy, coordinated arrangements.



NAVAL INSPECTION—Examining REINS radar assembly in clean room of GD/E-San Diego during one-day visit are Vice Adm. P. D. Stroop, USN, (arrow); Capt. N. R. Richardson, USN, (standing at Admiral Stroop's left); Capt. B. K. Beaver, USN, (at far left bending over assembly), and other Naval visitors. J. L. Brooks, manager of engineering, and J. H. Thompson, manager of operations, conducted tour of assembly area.



KICKOFF—Head table at GD/Electronics - SD meeting to plan separate Management Club included (from left) L. M. Falos, D. C. Newlon, J. V. Kappler, Zone A manager of NMA, General Manager John L. Lombardo, Kent Sinclair, and R. S. Durnell.

MISSILE REPLICAS PRESENTED DEPOT

Replicas of Advanced Terrier and Tartar missiles were presented recently to U. S. Naval Weapons Station, Seal Beach, Calif., by C. L. McCabe, director of fleet systems support at General Dynamics/Pomona.

In a ceremony conducted during RAdm. Eli T. Reich's recent visit to the station on a Terrier/Tartar guided missile program inspection tour, McCabe made the presentation to Capt. W. C. Hall Jr., commanding officer, who accepted the stanchions on behalf of the station.

Presentation of the missile replicas was made in recognition of the years of Terrier/Tartar support by the missile depot.

Guided Missile Service Unit 217, activated at Seal Beach in January, 1954, was the first West Coast Terrier/Tartar depot checkout facility. GMSU 217 was disestablished in June, 1961, when the station's Missile Division of Ordnance Department was activated.

LCdr. John DeMaster, USN, is missile division officer. GD/Pomona representatives at the depot are H. F. Disney and J. A. Bryant of field services (Dept. 6).

U. S. Naval Weapons Station, Seal Beach, located near Long Beach, is approximately 36 miles from Pomona.

More Than 250 Attend Meeting To Organize GD/E Mgt. Club

Over 250 General Dynamics/Electronics people approved plans for their own Management Club at the organizational meeting Aug. 1.

Bylaws and constitution for the new group, to be known as the GD/Electronics/San Diego Management Club, were accepted and nominees for officer posts presented.

Four are in the running for president: Kent Sinclair, who heads up the steering committee; T. W. Moffett, R. J. Cary, D. A. Graybill.

Other nominees are: First vice president—C. E. Klein, C. R. McGeehee, Tom Bankhead, Don J. Pugh.

Second vice president—M. L. Tucker, D. C. Newlon, T. E. Morris.

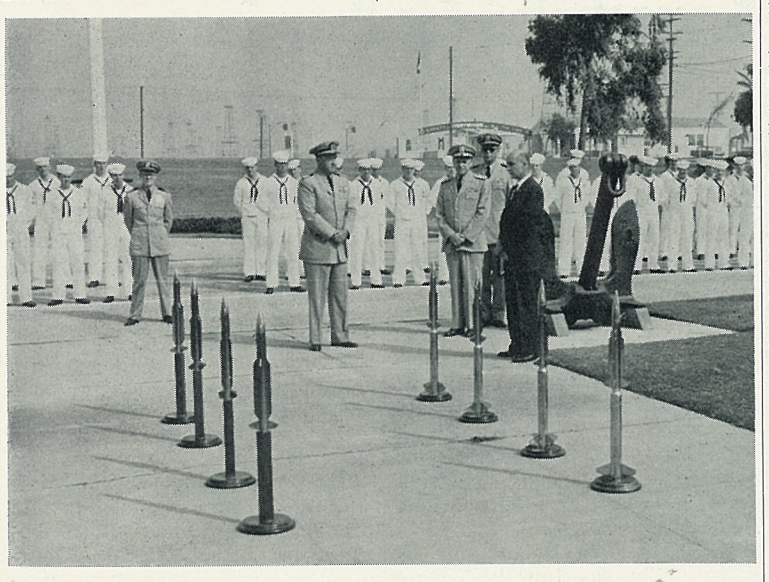
Treasurer—L. A. DiVincenzo and M. M. Reeder.

Secretary—George Oatman and C. B. Vinson.

Board of control, all one-year terms—A. E. Degler, C. E. Murdock, J. Brown, Bob Durnell, L. F. Kruse, Dave Proctor, N. J. Barnes, Jim Hardy, Rex Brouillard.

Members were to mark their ballots and return them by yesterday (Aug. 20) to Moffett. Names of selected officers will be disclosed at the first regular meeting of the GD/E group, set for Oct. 8. Installation also will take place at that time.

Meanwhile, the steering committee will be in charge of all arrangements until permanent officers take over their jobs.



DEPOT GIFT—C. L. McCabe, right, director of fleet systems support at GD/Pomona, presents replicas of Advanced Terrier and Tartar missiles to Capt. W. C. Hall Jr., commanding officer of U. S. Naval Weapons Station, Seal Beach, Calif. In foreground, from left: LCdr. J. Weaver, USN, ordnance officer; Capt. Hall; RAdm. Eli T. Reich, USN, assistant chief for surface missile systems; LCdr. R. W. Hanson, USN, administrative officer.

Utility Costs Drive Zooms Beyond Target

General Dynamics/Astronautics' year-long campaign to reduce utility costs has proven highly successful, exceeding original goals by more than $52,000.

Astro launched the effort in July, 1962, with an eye to lowering the cost of gas, electricity and water service by at least $200,000 per year. Final tabulations through June show actual savings were $252,700.82!

This saving would pay gas, water and electricity bills for 1,150 average San Diego homes for a full year!

A special word of praise to all who took part in the effort came this week from W. J. Stanley, manager of plant engineering.

"Individuals, functions and departments have helped through suggestions and direct assistance in setting up cost-reducing efforts," Stanley said. "Each person who helped can take pride in our accomplishments."

Stanley also indicated that results of the effort have been so encouraging that there will be a continuation of the program to encourage further reductions in utility costs. The program will continue indefinitely with every employee with an idea on this subject urged to contact plant engineering at any time.

Joe Dragonetti, ext. 3486, Plant 71, will accept suggestions directly.

Several factors occurring during the drive highlighted its success. For instance, Astronautics assumed complete responsibility for Plant 19 during this period, added new facilities like the GLOTRAC test unit and more Centaur test and production facilities.

During the year before the drive utility bills ranged from $105,000 to over $130,000 per month. The average saving of some $22,000 per month has lowered average monthly costs to around $95,000.

Two GD/Pomona Engineers Attend Management Workshop Course

Harlan E. Pankau, assistant project engineer (Dept. 6), and W. A. Drake, assistant reliability group engineer (Dept. 27), have been going back to school as students of Dr. Seymour Friedland's management workshop at the Claremont Summer Session.

Firms represented in the workshop included GD/Pomona, Aerojet-General, B. H. Hadley, Motorola, Inc., North American, Security First National Bank of Riverside, Space-General.

After 45-minute classroom instruction sessions by Friedland, associate professor of economics, the students, who were divided into management groups of "game companies" worked on decision problems, which were fed into a 1013 Data Transmitter at Claremont Graduate School and University Center, which then sent the data over telephone lines to a 7090 IBM computer in the Western Data Processing Center, Los Angeles, which, in turn, replied by telephone.

The computer generated balance sheets, income statements and product reports.

The eight-week workshop began June 10 and continued twice a week from 7 to 9:30 p.m. through Aug. 2.

Save Materials—Don't Throw Your Job Away

City Council Approves Naish's Appointment

H. S. Naish, chief of employee services and safety at General Dynamics/Pomona, has been appointed to the Pomona City Merit Commission.

Naish was unanimously approved by the city council for a term ending June 30, 1966. The five-member Merit Commission serves as adviser to the city council on personnel matters.

Naish is also serving on City of Los Angeles police review board and is active in work of Los Angeles Safety Council, National Safety Council, Southern California Recreation Association and National Recreation Association. He recently retired as a lieutenant colonel in the Army Reserve.

Value Control In 4th Year

The 23rd value control seminar completed two weeks of training and actual practice at getting the most for the fewest dollars at GD/Fort Worth this month—third anniversary of the start of the program in August of 1960.

The 44 men in the group brought to 917 the total number of participants who have gone through the two weeks of applying value engineering techniques at Fort Worth.

The August group included four representatives from GD/Electric Boat division, as well as two participants from the Air Force.

H. W. Hinckley, B-58 program director, told the group at the "graduating" session that the purpose is two-fold: to sharpen skills in use of value engineering techniques, and to take advantage of new ideas developed during the training seminars.

Further, he said, seminar participants were responsible for carrying value engineering concepts back to their jobs and to help spread the philosophy among others.

R. Kahn, F-111 material manager, told the group of his department's continuing program to develop and maintain a high level of value engineering among F-111 subcontractors.

The seven topics tackled by the seven teams in the seminar were all oriented toward F-111 aircraft design considerations, although the starting points for almost all were B-58 Hustler items.

AF Gives Full Support To Value Engineering

"The best-managed companies stand to gain by increasing their efficiency—and so does national security," said Air Force Secretary Eugene M. Zuckert in a recent address of major significance to General Dynamics/Astronautics.

Zuckert was referring to Defense Secretary Robert S. McNamara's Presidential charter to "eliminate 'gold-plating'" in defense procurement; to trim the "frills" from military hardware by analyzing its function, then achieving this function at the lowest overall cost.

The military profits in terms of better, more reliable equipment; the public gets more for its tax dollar; and contracting industries improve their competitive positions through increased efficiency.

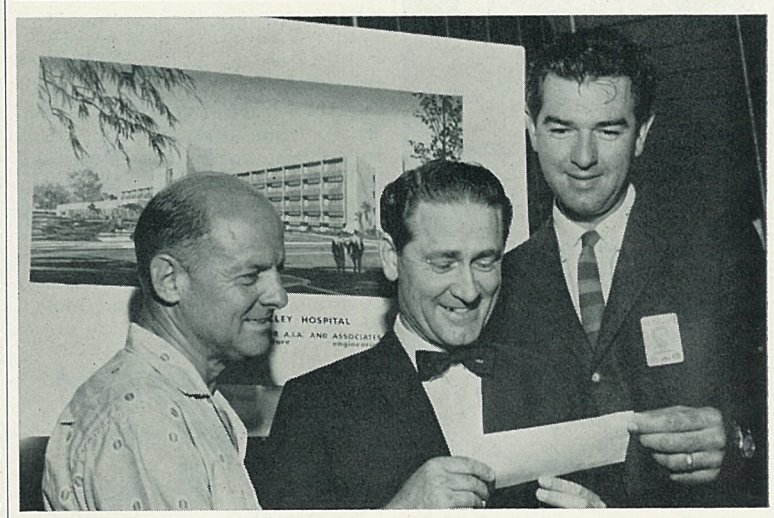
At GD/Astro, one phase of the effort to achieve these ends takes the form of a full-scale value engineering program.

The Air Force Plant Representative's Office, commanded by Col. Malcolm K. Andresen, as well as GD/Astro management gave full support to a pilot VE seminar held earlier this year.

Seminar coordinator was E. A. Lindem, Dept. 130-3, with the program directed by E. D. Heller, manager of value control (Dept. 165).

Among participants were two AFPRO engineers (John B. Cianciarulo, production division, engineering branch, and Frank H. King, development engineering division), along with representatives of a cross-section of GD/Astro departments.

The seminar is expected to produce major dollar savings on projects explored by the eight teams taking part, and, in addition, the mutual Air Force-GD/Astro enthusiasm for this approach to reducing aerospace procurement costs has resulted in a new level of customer-contractor understanding.



MAJOR GIFT — With artist's conception of Paradise Valley Hospital as backdrop, L. D. Graeff, left, IAM representative on GD/Astro Employees' Con-Trib-Club, and J. T. Schultz, right, representing company, present $3,500 Con-Trib check to Victor Duerksen, assistant hospital administrator. Gift is earmarked for hospital building fund.



ROLLING STOCK—Astro Con-Trib-Club recently gave $2,000 for purchase of pickup truck to Synanon House of San Diego, group providing rehabilitation for narcotics users. J. R. Mitchell, right, Con-Trib chairman, presents keys to Arnold Ross, Synanon resident director, while Dave Haslanger, Al Cernius, Jerry Schultz, Mike Alianelli, Don Glasser and Floyd Allen look on.



IDEA PAYOFF—Leo Budzynski and H. M. Woodard (at right), both GD/Convair Dept. 101, each receive checks for $250.60 from Frank Blair, fabrication superintendent, for Employee Suggestion which resulted in reclamation of thousands of dollars worth of bonding plastic, now put to use as forming material. Second from left is G. K. Cox, Dept. 101 foreman.

Coast to Coast Flight Earns Mackay Trophy

It set something of a double-double record when the Mackay Trophy was presented Aug. 8 at Carswell Air Force Base, Texas.

The award went to the three-man flight crew that set a new transcontinental speed record when they flew Los Angeles to New York on March 5, 1962, in two hours and 56 seconds in a GD/Fort Worth-built B-58.

It was the second nationally-recognized aviation trophy to be presented as a result of the flight. Earlier, the Bendix Trophy had been awarded for the same flight, and received by the same crew: Major Robert Sowers, and Capts. Robert MacDonald and John Walton.

And it was the second time that the Mackay Trophy had been won by an Air Force crew flying a B-58. The first time, it was won for a Washington-New York-Paris, France, speed run on May 26, 1961.

In each case, the Mackay Trophy was awarded in recognition of aviation achievement considered the most meritorious flight of the year—first in 1961 and again in 1962. And, in each case, won by B-58s flown by crews of the 43rd Bomb Wing at Carswell AFB, as was the case of the Bendix.

The latest Mackay Trophy presentation was made by Air Force Undersecretary Brockway McMillan on behalf of the U. S. Air Force Chief of Staff, whose office is permanent custodian of the three-foot-high masterpiece in silver.

Wood, Plastic

F-111 Mockups To Look Like The Real Thing

Models of the F-111 made of wood, plastic or fiber glass are under construction at General Dynamics/Fort Worth.

"And when we are finished you can look at the mockups from a few feet back and swear that they're aircraft ready to fly," C. Houp, general foreman, added.

Houp and the men who work with him in the F-111 mockup area are almost all old hands at the mockup business. Houp's first job with the company, for example, was working on the XB-24B mockup in 1940 in what is now the GD/Convair division plant at San Diego.

(The XB-24B mockup was one of the production steps leading to thousands of the famous B-24 Liberators built at GD/FW and elsewhere during World War II.)

"In building mockups, things haven't changed too much," says Houp, "although the airplanes certainly have. In each case, though, we get our basic lines from the engineers.

"We find out what they want to show in the mockup, what the dimensions are, and what the various items—as well as the finished overall product—are supposed to look like. It's then up to us to figure out how to get from the picture in the engineer's mind to a realistic-looking representation that he can see and touch.

"This gives the engineers a chance to see how various pieces and components are arranged in relation to the others. And, in some cases, the mockup shows them that certain details of their design are acceptable — or are not."

Houp says the F-111 mockup is not much unlike most others he and his men have built, except for building the variable-sweep wing.

In actual flight, the F-111 wing, attached at pivot points to the fuselage, will swing outward or inward to provide maximum performance throughout the aircraft's extremely wide speed range, up to two and one-half times the speed of sound.

Astro Man to Present Two Papers in Tokyo

L. L. Fontenot, design specialist in charge of advanced methods in GD/Astronautics dynamics group (Dept. 541) will travel to Tokyo next week to deliver two papers at the 5th International Symposium on Space Technology and Science, Sept. 1-7.

Scheduled for presentation are Fontenot's "Free vibration of thin elastic pressurized cylindrical shells filled with a perfect and incompressible liquid having a free surface," and "Flexural vibrations in uniform beam columns according to the modified Timoshenko theory."

Six-Foot 990 Put on Display In Indonesia

A realistic model of the Convair 990A jet transport, made to order for Garuda Indonesian Airways, arrived at the Djakarta main base in time to go on public display during the Aug. 17 Independence Day celebration.

The 6-ft. model, perfect to the tiniest detail—even with miniature running lights in wing tips and tail—was the first of two cutaway 990A display models being completed by GD/Convair technical publications for the Indonesian airline.

Karl Busch and Bill Seehorn spent painstaking hours in the technical publications workshop making and installing the tiny seats and cabin details which turned the model into a true duplicate of a Garuda 990A.

First class and tourist seating arrangements, six rows of four seats across and 15 of 5 across, buffets, coat racks, and lavatories were carefully fastened into place. All colors match the actual Garuda interior of gray, blue and yellow, and the exterior white and red stripings, highlighted with the symbolic bird emblem. A plexiglass cover protects the cabin section.

Extensive use of a new modeling process turned out seats and buffets on an assembly line basis to substantially reduce construction costs of the models, said H. R. Kennedy, chief of technical publications.

Each piece is first carved to scale in hardwood, converted to a master mold of silicone rubber, then cast in solid resin and painted. Quantities of exactly-detailed pieces can be turned out in a matter of hours, eliminating individual hand-shaping and carving.

Kennedy said that the process could be called into action at any time to convert an existing stock of 880 and 990 standard fiber glass models into the particular configuration of any airline operating Convair jet transports.



SENT ABROAD — Cutaway plane model, perfect replica of Garuda Indonesian Airways 990A, is on display at Djakarta. Below, Karl Busch and H. R. Kennedy of technical publications examine tiny 990 seats pulled from silicone rubber mold.

Explosives Used in New GD/FW Welding Process

Explosives that usually wreak havoc on everything within the range of their blast are being given a reverse twist at General Dynamics/Fort Worth.

Now they're being used—under controlled conditions—to explosively join together metals that heretofore just wouldn't join. Or to join shapes that otherwise couldn't be satisfactorily achieved by any other known process.

For a handy handle, the new process—still in the experimental test stages—is called explosive welding.

"That's because," says R. K. May logically, "the joining together is produced by an explosion. And the end result is a weld of the two metals."

May is GD/Fort Worth chief of applied manufacturing research and process development.

The explosive welding concept at GD/Fort Worth evolved when engineers, during the early days of working with the Dynaform process, found that in some instances the parts they were forming became welded to the dies.

"This indicated clearly that explosive welding could be done intentionally," said Cole. "And at that time, photographic and written records were entered as documentation to support a General Dynamics proprietary interest and patent right in the process."

Explosive—65 per cent blasting gelatin, for example—is applied to one of the two surfaces to be welded. The two surfaces are placed close together. The explosive is fired.

An example of welding ordinarily incompatible alloys—alloys that cannot be satisfactorily welded by other methods—is the explosive welding of two different aluminum alloys. On one demonstration, engineers welded spiraling aluminum fins made of one alloy to an aluminum tube made of another alloy.

'Rube Goldberg' Device Designed For Boring Job—and It Works!

An original design, an "Erector Set," and plenty of "can-do" spirit were ingredients used at GD/Astronautics recently in a project supporting NASA's Atlas-launched OAO (Orbiting Astronomical Observatory) program.

For structural tests, plans called for an Atlas "stub tank" (forward portion of the space booster) with Agena stage and OAO payload attached, to be erected in "C" Tower at GD/Astro's Point Loma Test Site.

Base of the Atlas tank was to rest on a gasket fitted to a 14 by 14-ft. plate of two-inch steel. Absolute flatness of the plate was to be assured by grooving the plate to accept the circumference of the Atlas.

Unfortunately, no machine in Southern California was big enough for the job!

This was the problem on which engineers Clarence Holmes and Bill Fogg of systems test lab (Dept. 565-1) consulted General Foreman Ralph Bauman's engineering test support (Dept. 756).

Bill of materials for this "portable boring mill" called for purchase of only a few items: some chain, sprockets and bearings—and a wheelbarrow wheel.

Other portions of the assembly were available within GD/Astro or could be readily produced in Dept. 756 machine shop.

At Point Loma, Dick Bada, "C" Tower supervisor, used the facility's assortment of structural steel beams (drilled at regular intervals for assembly in a variety of shapes for a variety of purposes, and dubbed "The Erector Set") to set up a supporting structure for the tool.

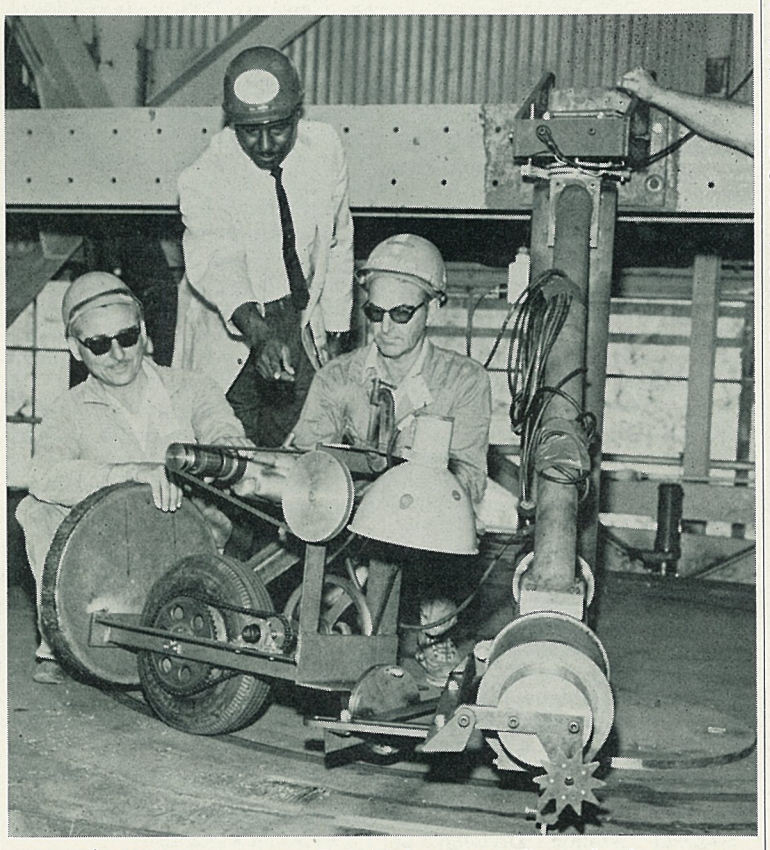
The job was to be done with the plate in place in "C" Tower.

Basically, the "portable boring mill" consists of a cutting tool mounted on the outer end of a radial arm which extends from a rotating spindle.

A large drill motor drives the tool through a system of belts and sprockets, connected to the rubber wheelbarrow wheel for traction.

It works!

The tool—looking like something from a Rube Goldberg cartoon—bored out some portions of the groove to three-eighths-inch depth, completing the massive job to .004-inch tolerance.



UNDER WAY—Engineer C. L. Holmes, standing, checks on progress as Dave Brockman, left, and M. W. Mathewson operate "portable boring mill" produced by GD/Astro engineering test support for use at Point Loma Test Site. Device was used to cut circular groove in two-inch steel plate.

Two Authors Qualify For Writing Awards

Two men have qualified for the $150 General Dynamics/Pomona Writing Award.

Dr. M. C. Abrams, staff scientist (Dept. 6), qualified for the award when his article, "Chemical Flame Quenching Theory," was accepted for publication by Pyrodynamics magazine.

G. F. Allen, electronics engineer (Dept. 6), qualified for the same award when his article entitled "Reliability with Confidence" was accepted for publication in Electronics magazine.

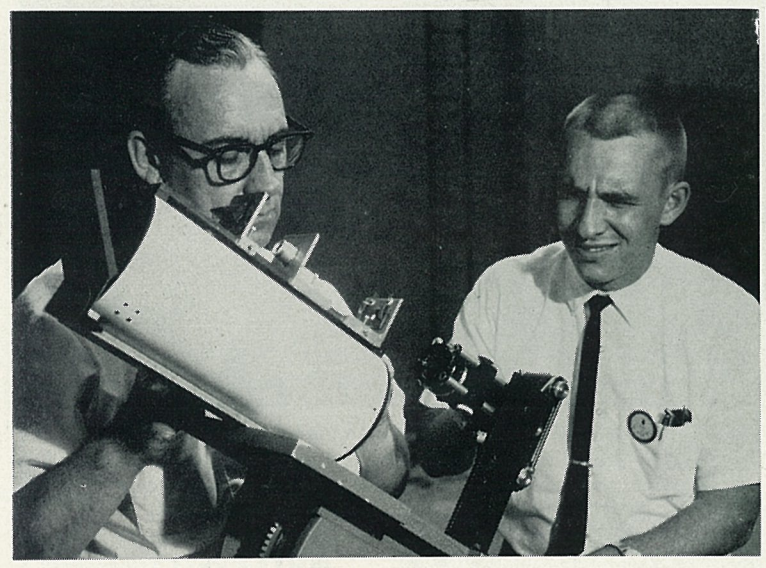


ECLIPSE—Photo shot at precisely 2:03 p.m. coast time July 20 with special equipment assembled at GD/Pomona, shows how sun looked during eclipse.



SUN CHASING—American Airlines took more than 70 newsmen, photographers and scientists to 35,000 feet July 20 in a 990 Astrojet, built by GD/Convair, giving them a front seat for eclipse of sun. At right is Frank Hurley of New York Daily News aiming camera. Flight was over Bangor, Me. Takeoff photo shows Astrojet similar to one used for eclipse flight.





VIEWER—Recent partial eclipse of sun as seen at Pomona was photographed with aid of solid state image converter developed by GD/Pomona's physics and infrared section. Image converter panel is located immediately in front of camera. Geoffrey C. Knight, senior physicist, left, and Robert MacFarlane, inspect equipment.

'Solid State Image Converter' Used to Photograph Eclipse

The recent eclipse of the sun was photographed at GD/Pomona with aid of a "solid state image converter" developed and constructed by the physics and infrared section.

"It is believed that this is the first application of a solid state device for purpose of photographing a high intensity source," R. J. Sneed, physics and infrared section head, said.

The device used for photographing the eclipse at Pomona is a visual-to-visual converter. On the same principle a converter can be constructed which produces a visible display of objects observed in the ultraviolet or infrared portion of the spectrum.

Advantages of this type of device and its potential applications are numerous. An object is viewed at all times indirectly and output intensity at the observer side can be limited to tolerable levels. This affords protection to any detector—human eye or photoelectric sensors. The converter also has inherent light amplification capabilities which permit observation of very low intensity sources without affecting the high intensity protection.

Basic configuration of the image converter is a sandwich consisting of a photoelectric layer on the object side and an electroluminescent layer on the observer side. An opaque film between these two layers prevents optical feedback.

Voltage is applied to both sides of the sandwich by means of thin metallic electrodes. The entire unit represents a network in which the incident light controls, locally, the resistance in the photoelectric layer. This in turn controls the field across the electroluminescent layer on the observer luminescent output, or brightness, at the observer side. Particle size, film thickness of the active layers, and similar parameters control resolution of the converter.

The image converter is presently being developed at GD/Pomona for the U. S. Army Quartermaster Corps.



"Can you put Mrs. Brown on a machine that will give her something to think about while she talks?"

Production Steps up at New Plant Of Electro Dynamic in Avenel, N.J.

Wheels are turning at Electro Dynamic Division of General Dynamics Corporation this month as production steps up in the new home plant at Avenel, N.J.

Equipment was moved in and positioned by the end of July and first cuts made as the General Dynamics division swung back from the April fire which razed its former plant at Bayonne, N.J.

The Avenel plant is in limited production now and will be in full production this fall, said Raymond B. Carey Jr., president.

Electro Dynamic produces electric motors and generators for defense and industry.

In reviewing the strides made in the weeks since the fire, Carey stated that in the long run the division will be a greatly improved operation.

"Starting fresh, we have done everything possible to improve work flow, materials handling and production methods.

"I'm sure this will pay off in better service for all our customers."

Manufacturing operations are carried on in five major buildings of the Avenel plant, acquired from Art Metal Corp. Office area is on the second floor of Bldg. 1 and executive offices are located in the administrative building at the entrance to the plant.

Aside from repainting, little renovation was needed in the main plant area. The Bldg. 1 office space was refurbished and air conditioned.

Floor space was being blocked out for Electro Dynamic's operations even as Art Metal was moving its equipment out. And, layouts were firmed to meet schedules for unloading machinery from railroad cars at one end of the plant.

Milton Hangen, GD/Convair industrial engineer, was recruited to help lay out the plant. Working with George Dillin, chief industrial engineer for Electro Dynamic, and Mike Yackmetz, assistant plant superintendent and their staffs, Hangen started with bare floor space. All departments outlined their functions and requirements, and shifted templates back and forth on the master plan to try out various arrangements for the most efficient layout of operations.

Everyone put in long hours and bent every effort to get the job done as quickly as possible. Hangen, a 30-year General Dynamics man, said that he had the utmost cooperation from every person at Electro Dynamic, and thoroughly enjoyed his six weeks at the sister division.

Carey, in a letter to GD/Convair President J. H. Famme, commended Hangen for his assistance, "Thanks so much for sending us Milt Hangen. His services in connection with the layout of our new facility at Avenel were invaluable."

All GD divisions gathered together to help put Electro Dynamic back into production. Nearly three-fourths of needed machining tools and office equipment was sent from other GD plants all over the country. The balance was made up of a small number of items salvaged from the fire; specialized tools made by Electro Dynamic itself; and other standard machine shop tooling, not obtainable elsewhere, purchased new.

Adv. Products Moves East

Advanced Products, developer and distributor of Dynapak metal forming machines, has been transferred from San Diego to Electro Dynamic Division at Avenel, N.J.

Manufacture, engineering, administration, and sales of Dynapak will be assumed by the New Jersey division. Up until now, actual assembly of the revolutionary high-energy-rate metalworking machines had been subcontracted to other firms.

The present move will place Dynapak closer to the major Eastern market, explained R. B. Carey Jr., Electro Dynamic president.

Advanced Products personnel transferred to Electro Dynamic jurisdiction include the entire sales staff under Warren G. Mang, general sales manager, who had been based at New York.

Sales representatives will keep their present assignments in different sections of the country. They are: T. J. Critton, Cleveland, Ohio; M. H. Stevens, Los Angeles, Calif.; I. J. Uslander, Chicago, Ill.; R. J. Wagner, New York City.

Others going from San Diego to the East Coast division are Milton Chanin, chief engineer; B. C. Dunn, service manager; S. W. Gilberg, manager application engineering; A. F. Stratton, project engineer. R. A. Kiefelhorst, chief of operations since 1960, will integrate manufacturing processes at Electro Dynamic.

Advanced Products department, which has been located at the San Diego seaplane ramp since early 1961, has been under direction of M. J. Gallagher, general manager since early last year. Both Gallagher and Mang have been with the facility since its formal establishment in 1958.

The Dynapak project, which resulted in the unique concept of metalworking machine, began at Pomona, Calif., with a two-person staff in 1955. At its peak, the facility had an employment of 65 persons.

General Atomic Division of General Dynamics Corporation, which has shared the ramp building at San Diego the last few months, will expand into space vacated by Advanced Products.

Tighter Control Placed Over Plant Equipment

Tighter control of plant equipment is expected to result from new accountability and inventory procedures inaugurated this week at General Dynamics/Astronautics.

Effective Monday (Aug. 18), responsibility for physical inventories of equipment was turned over to a permanently assigned team of inventory personnel, directed by Frank Jenkins, supervisor in facilities control section, plant engineering (Dept. 250-2).

At the same time, the system of Secondary Accountability Custodians (SACs) was dissolved. SACs were previously responsible for inventorying equipment within their departments.

All plant equipment control records will now be maintained by facilities control.

However, department heads retain responsibility for proper care and use of equipment in their areas, for reporting property loss or damage (SP-7-22, Supplement 1), and for adhering to regulations concerning equipment movement or disposition (SP-6-5).

"All departments have been urged to cooperate and assist with the continuing inventory effort, in order to assure results compatible with good business practice and Air Force regulations," Jenkins said.

"Items which are not located during inventory are subject to assessment of liability by the government, or, in the case of company-owned equipment, direct financial loss to GD/Astro."

ARMY RESERVIST TAKES TRAINING

Robert C. West, master scheduler analyst in GD/Astro Dept. 362-3, recently completed an Army Reserve training stint at Fort MacArthur, Calif.



WELCOME—VAdm. E. P. Holmes, commander of U. S. Navy amphibious forces in Pacific, is greeted by GD/Pomona President C. F. Horne on admiral's arrival Aug. 6 for familiarization visit to Pomona division.

GD
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GENERAL DYNAMICS NEWS

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KICKOFF—Head table at GD/Electronics - SD meeting to plan separate Management Club included (from left) L. M. Falos, D. C. Newlon, J. V. Kappler, Zone A manager of NMA, General Manager John L. Lombardo, Kent Sinclair, and R. S. Durnell.

More Than 250 Attend Meeting To Organize GD/E Mgt. Club

Over 250 General Dynamics/Electronics people approved plans for their own Management Club at the organizational meeting Aug. 1.

Bylaws and constitution for the new group, to be known as the GD/Electronics/San Diego Management Club, were accepted and nominees for officer posts presented.

Four are in the running for president: Kent Sinclair, who heads up the steering committee; T. W. Moffett, R. J. Cary, D. A. Graybill.

Other nominees are: First vice president—C. E. Klein, C. R. McGeehee, Tom Bankhead, Don J. Pugh.

Second vice president—M. L. Tucker, D. C. Newlon, T. E. Morris.

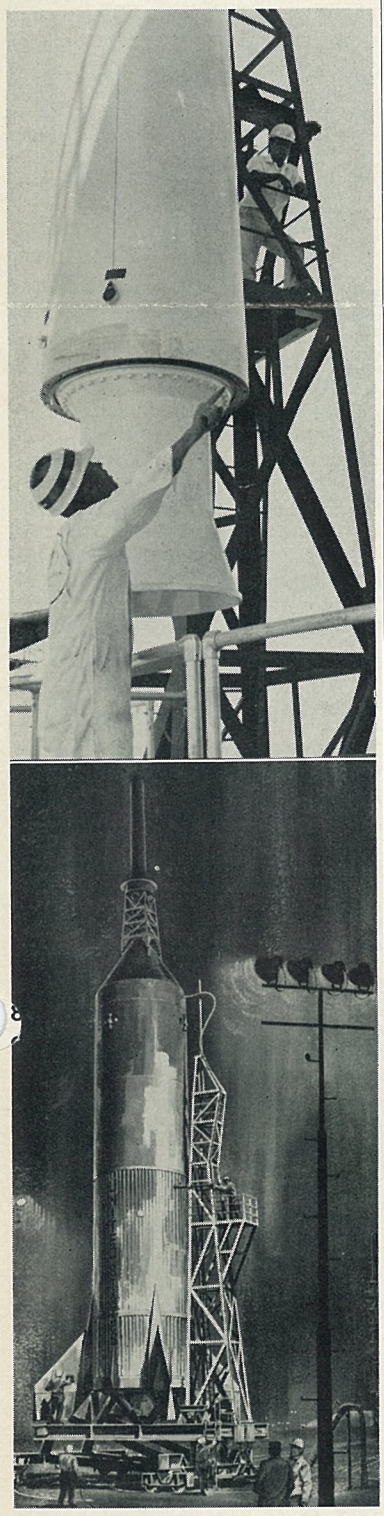
Treasurer—L. A. DiVincenzo and M. M. Reeder.

Secretary—George Oatman and C. B. Vinson.

Board of control, all one-year terms—A. E. Degler, C. E. Murdock, J. Brown, Bob Durnell, L. F. Kruse, Dave Proctor, N. J. Barnes, Jim Hardy, Rex Brouillard.

Members were to mark their ballots and return them by yesterday (Aug. 20) to Moffett. Names of selected officers will be disclosed at the first regular meeting of the GD/E group, set for Oct. 8. Installation also will take place at that time.

Meanwhile, the steering committee will be in charge of all arrangements until permanent officers take over their jobs.



READIED FOR FLIGHT — In upper shot Duncan Guest of GD/Convair Dept. 311 directs hoisting of Aerojet Algol motor for installation in Little Joe II launch vehicle at White Sands Missile Range, N.M. Below is artist's drawing of GD/Convair-built vehicle as it will look on launcher before initial firing which will be in near future.

GERMAN OFFICIALS STUDY GD/CONVAIR SATS MATS DESIGN

(For photo, see page 2)

GD/Convair's landing mat concept, developed for the SATS program, was included among other matting designs and installations on the recent itinerary of a German military inspection team.

Dr. Alex Wolff, Military Technology Division (Ground Support Equipment) and Lt. Col. Emil Siegert, both from Bonn, Germany, visited the GD/Convair plant late last month.

They are devoting their time to evaluation of matting configurations which might prove compatible with German aircraft. Prime purpose of their trip was to observe all work being done in this country on landing mat systems.

Astro Man to Present Two Papers in Tokyo

L. L. Fontenot, design specialist in charge of advanced methods in GD/Astronautics dynamics group (Dept. 541) will travel to Tokyo next week to deliver two papers at the 5th International Symposium on Space Technology and Science, Sept. 1-7.

Scheduled for presentation are Fontenot's "Free vibration of thin elastic pressurized cylindrical shells filled with a perfect and incompressible liquid having a free surface," and "Flexural vibrations in uniform beam columns according to the modified Timoshenko theory."

Convair Mgt. Club Resumes Meetings

GD/Convair Management Club members resume regular monthly meetings for the club term with tonight's (Aug. 21) gathering at the Catamaran Hotel on Mission Bay.

Social hour is at 5:30 p.m.; dinner at 6:30.

Main speaker is John Bate, director of the Port of San Diego. Mug of Month and Mac-Save-it awards will be given and the usual raffle held. Sponsoring department is engineering.

Women Taking Value Training For First Time

A value control task force went into action at GD/Convair the last couple of weeks as one function put in a request for individual value vs. cost training.

H. B. Day, supervisor of graphic reproduction, is sending 12 of his people to an accelerated indoctrination to give them the basic principles governing value at the least cost of both material and manpower.

H. P. Williams, manager of value control, divided the group into two sections. Each is spending two hours a day for four days in class. They are focusing their attention on an actual project from their own department—better means of streamlining records which keep track of the performance of people and of the multitude of jobs going through the reproduction operations.

The three or four women tabbed to attend are the first of their sex to have a chance to take GD/Convair value control training. They are lead women in the graphic reproduction section. Others are supervisors, assistant supervisors, and leadmen.

In addition, personnel from the controller's department are participating in the special short-term course.

Atlas/Centaur Tests Set For Cleveland

General Dynamics/Astronautics engineers and technicians are on hand at NASA's Lewis Research Center (LERC) in Cleveland, Ohio, to help prepare for a series of Atlas/Centaur tests next month.

Tests, supporting Centaur development, will continue over a period of months and will be conducted on test elements fabricated by Astro.

Astronautics has designed and fabricated a special "whalebone" Atlas for these tests, complete with all mating components and fittings. Also a pressurized unit has been built to simulate the Centaur vehicle which, despite its smaller size, duplicates all weight and configuration requirements of the real thing.

$400,000 Design Task Awarded

General Dynamics/Convair has been awarded a $400,000 study and design contract which will lead to development of expanded range instrumentation to be installed in Florida for space launch and weapon systems testing over the Atlantic Missile Range.

The award, part of the Air Force Systems Command's program, was made by Pan American World Airways, Inc., Guided Missile Range Division, Patrick Air Force Base, Fla. Pan American World Airways is prime contractor for operation and maintenance of the Atlantic Missile Range.

Under the subcontract's first phase, GD/Convair electronics and instrumentation engineers will formulate the detailed engineering design required to integrate telemetry receiving, digital and analog equipment, and recording equipment within a new three-story building at Merritt Island, across the Banana River from Cape Canaveral.

GD/Convair also will develop remote control and display systems that will permit switching of equipment from several operator positions during missile countdowns and launches.

Heading TEL-4, as the program is known, is W. T. Dorrance, GD/Convair manager electronic systems, with Dave Kahler, deputy program manager-engineering.

Other key personnel involved in GD/Convair's development responsibility are L. R. McClain, technical group engineer, and R. F. Myers, group engineer-documentation.

Dorrance and Kahler headed up the dozen or so senior electronic and instrumentation engineers responsible for putting the program proposal together this spring. There are now nearly 20 engineers assigned to the project with the number expected to increase to 35 at peak of the workload this fall.

Work under the first phase will extend through January, 1964.

Satisfactory completion of the initial phase would lead logically into the second phase of fabrication and installation of equipment at the Florida station, say GD/Convair engineers in charge.

More than 300 large racks of government-owned electronics equipment will be housed in the 125 x 125-ft. building at Merritt Island.

In addition to integrating this

(Continued on Page 2)

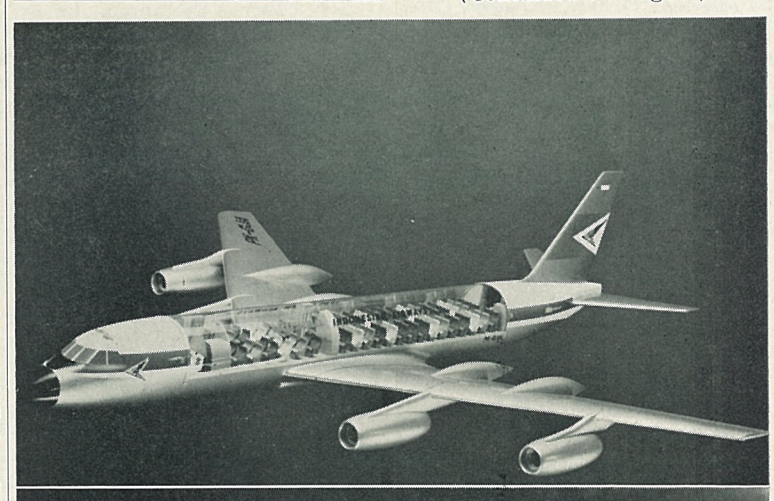
Six-Foot 990 Put on Display In Indonesia

A realistic model of the Convair 990A jet transport, made to order for Garuda Indonesian Airways, arrived at the Djakarta main base in time to go on public display during the Aug. 17 Independence Day celebration.

The 6-ft. model, perfect to the tiniest detail—even with miniature running lights in wing tips and tail—was the first of two cutaway 990A display models being completed by GD/Convair technical publications for the Indonesian airline.

Karl Busch and Bill Seehorn spent painstaking hours in the technical publications workshop making and installing the tiny seats and cabin details which

(Continued on Page 2)





SENT ABROAD — Cutaway plane model, perfect replica of Garuda Indonesian Airways 990A, is on display at Djakarta. Below, Karl Busch and H. R. Kennedy of technical publications examine tiny 990 seats pulled from silicone rubber mold.

Log Book Entries



Wearing new 25-year service emblems at GD/Convair are J. L. Killeaney, Dept. 128, left, T. F. Calvert, Dept. 140, G. D. Clark, Dept. 11-0, M. C. Tombler, Dept. 6-0.

Service Emblems

CONVAIR

Service emblems due during the period Aug. 16 through Aug. 31.

Twenty-five-year: Dept. 141, R. B. Maddox; Dept. 401-4, J. C. Brugger.

Twenty-year: Dept. 43-5, Mary G. Tambornino; Dept. 48, Gladys M. Garten, Ada N. Nickerson; Dept. 91-4, Doris M. Quinley; Dept. 115, W. J. Noga; Dept. 400-6, C. L. Walden.

Fifteen-year: Dept. 6-5, R. E. Leadon; Dept. 41-1, George Hampton; Dept. 171, Raymond Niski.

Ten-year: Dept. 6, R. G. DeBow Jr., R. S. Dodd, E. M. Ogden, G. L. Pankey, George Spanovich; Dept. 16, W. A. Costello, S. W. Lumnitzer; Dept. 25-3, B. L. Gammon; Dept. 27-6, Kathleen G. Gimlen; Dept. 131, M. F. Tidmore.

GD/ELECTRONICS

Ten-year: Dept. 22-00, G. E. Barrow; Dept. 71-00, Eunice L. Barger; Dept. 74-40, D. A. Good; Dept. 81-00, C. C. Kitsmiller (due June 17, 1963).

Awards

CONVAIR

Employee Suggestion awards approved for period ending Aug. 2.

Dept. 14, C. D. Duncan, $14.60.
Dept. 128, C. F. Kahler, $22.70.
Dept. 400, S. W. Kellogg, $19.20.

Cost Improvement Proposals for the same period.

Dept. 115, O. C. Banke.
Dept. 131, W. M. Clapp, A. C. Oehler.

Births

CONVAIR

PERKINS—Son, Donald Wayne, 7 lbs., 10 oz., born July 15 to Mr. and Mrs. Eugene E. Perkins, Dept. 401-4.

Retirements

CONVAIR

ALLEN—Richard W., Dept. 48. Seniority date Aug. 11, 1950, retirement effective Aug. 5, 1963.

COBB—Dewey G., Dept. 129. Seniority date Aug. 14, 1947, retirement effective Aug. 9, 1963.

DENSON—Virgie H., Dept. 218. Seniority date Jan. 5, 1951, retirement effective July 15, 1963.

JONES—Esther P., Dept. 401. Seniority date May 25, 1942, retirement effective July 31, 1963.

KIMBLE—Adrian H., Dept. 131. Seniority date Jan. 16, 1936, retirement effective Aug. 9, 1963.

KIRK—Joseph M., Dept. 25. Seniority date Sept. 25, 1950, retirement effective Aug. 6, 1963.

LLOYD—Grace P., Dept. 16. Seniority date July 12, 1949, retirement effective July 31, 1963.

MELI—Kenneth R., Dept. 23. Seniority date Nov. 17, 1947, retirement effective July 31, 1963.

RIGGS—G. Arleigh, Dept. 6. Seniority date May 5, 1955, retirement effective July 31, 1963.

SACHS—Ralph S., Dept. 93. Seniority date Sept. 29, 1950, retirement effective Aug. 9, 1963.

SCHURR—William A., Dept. 6. Seniority date July 29, 1929, retirement effective July 26, 1963.

SMITH—Louis H., Dept. 91. Seniority date Oct. 27, 1950, retirement effective Aug. 9, 1963.

Deaths

CONVAIR

ARSULICH—Thomas, Dept. 6. Died August 4. Survived by wife, Norma; five sons, mother, brother.

Personals

CONVAIR

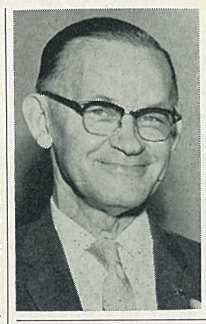
I want to thank my Convair friends for the beautiful flowers sent in memory of my wife.

John A. Bender, Dept. 25.

* * *

We wish to express our utmost appreciation to all of our friends at Convair, Astronautics, and Fort Worth for the many acts of thoughtfulness and kindness in easing our difficulties and sharing our grief during the illness and death of our husband and father, Larry C. Brandvig.

Helena Brandvig, Clifton and Alice.



John M. Hudson, Dept. 6-2 GD/Convair, celebrated his 30th anniversary last month, received service emblem from President J. H. Famme.

$400,000 Design Job Awarded GD/Convair

(Continued from Page 1)

equipment into a remote control telemetry signal patching system, GD/Convair would design a master coordinator's console, launch coordinators' consoles and a master display board.

The master display board will be a visual aid showing the status of equipment assignments, listing such information as type of equipment assigned, equipment available but not assigned, and available but not calibrated.

Under the program's first phase, GD/Convair will integrate a similar, but smaller, telemetry station at Vero Beach, Fla.

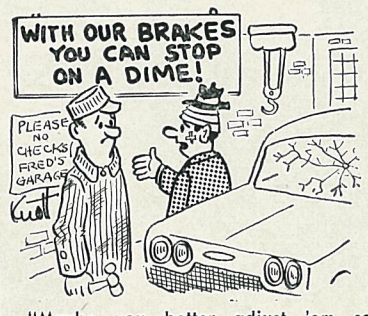
For the task, GD/Convair will be drawing upon its more than 20 years' experience in electronics systems integration. Currently the division is designing and installing all electronic and instrumentation systems for the Little Joe II launch vehicle, which will be used for testing of space hardware in the Apollo program. It also is performing electronic systems integration tasks for other General Dynamics divisions.

Labor Day to Offer Three-Day Weekend

A three-day holiday is in prospect for General Dynamics people as they observe the annual Labor Day weekend.

GD plants throughout the country will be closed Monday, Sept. 2, giving employees a final fling at beaches or mountains before the beginning of school terms. Necessary industrial security and maintenance people will be notified if they are required to report.

Regular shifts will resume Tuesday, Sept. 3, at usual times.



"Maybe you better adjust 'em so they'll stop on a dollar."

General Dynamics NEWS

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Exch. Student

Another Son Goes Abroad

GD/Convair son, Bryan Cheney, climbed on a bus a week or so ago to follow the route blazed three years ago by his brother, Carl, as he heads to Germany.

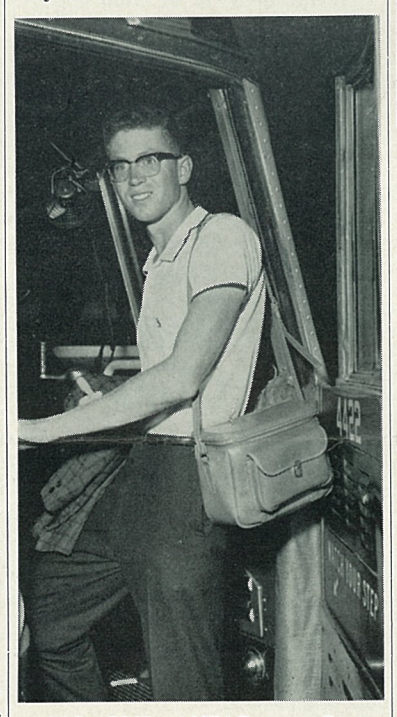
Both boys, sons of Harold Cheney, Little Joe II deputy program manager - launch operations at GD/Convair, now have been selected as exchange students through the American Field Service program.

Carl, now in Italy under the Stanford Overseas Campus program, spent several months with an Aachen, Germany, family. Bryan will have a full school year at the Hugo Junkers Gymnasium at Munchen-Gladbach, just 30 miles from Aachen.

He will make his home with Mr. and Mrs. Kurt M. Scheulen and their 16-year-old son, Max.

Bryan, 17, will be trading some of the highlights of his senior year in high school for the experience of living in another country. He had to give up his post as vice president of Grossmont High student body for the coming year and will miss the excitement of graduating with his senior class.

But, he feels that is a small price to pay for the new friends he will make and the understanding he will get of the German way of life and education.



BIG TRIP AHEAD — Bryan Cheney, GD/Convair son, climbs aboard bus to start cross-country trip before sailing for Germany as American Field Service exchange student.

Six-Foot 990 Put on Display

(Continued from Page 1)

turned the model into a true duplicate of a Garuda 990A.

First class and tourist seating arrangements, six rows of four seats across and 15 of 5 across, buffets, coat racks, and lavatories were carefully fastened into place. All colors match the actual Garuda interior of gray, blue and yellow, and the exterior white and red stripings, highlighted with the symbolic bird emblem. A plexiglass cover protects the cabin section.

Extensive use of a new modeling process turned out seats and buffets on an assembly line basis to substantially reduce construction costs of the models, said H. R. Kennedy, chief of technical publications.

Each piece is first carved to scale in hardwood, converted to a master mold of silicone rubber, then cast in solid resin and painted. Quantities of exactly-detailed pieces can be turned out in a matter of hours, eliminating individual hand-shaping and carving.

Kennedy said that the process could be called into action at any time to convert an existing stock of 880 and 990 standard fiber glass models into the particular configuration of any airline operating Convair jet transports.



IDEA PAYOFF—Leo Budzynski and H. M. Woodard (at right), both GD/Convair Dept. 101, each receive checks for $250.60 from Frank Blair, fabrication superintendent, for Employee Suggestion which resulted in reclamation of thousands of dollars worth of bonding plastic, now put to use as forming material. Second from left is G. K. Cox, Dept. 101 foreman.



GERMAN VISITORS—Dr. Alex Wolff, right, and Lt. Col. Emil Siegert, left, from Bonn, Germany, are snapped in GD/Convair SATS mats production area with Vern Sharp, chief plant engineer, during recent inspection tour.

Coast to Coast Flight Earns Mackay Trophy

It set something of a double-double record when the Mackay Trophy was presented Aug. 8 at Carswell Air Force Base, Texas.

The award went to the three-man flight crew that set a new transcontinental speed record when they flew Los Angeles to New York on March 5, 1962, in two hours and 56 seconds in a GD/Fort Worth-built B-58.

It was the second nationally-recognized aviation trophy to be presented as a result of the flight. Earlier, the Bendix Trophy had been awarded for the same flight, and received by the same crew: Major Robert Sowers, and Capts. Robert MacDonald and John Walton.

And it was the second time that the Mackay Trophy had been won by an Air Force crew flying a B-58. The first time, it was won for a Washington-New York-Paris, France, speed run on May 26, 1961.

In each case, the Mackay Trophy was awarded in recognition of aviation achievement considered the most meritorious flight of the year—first in 1961 and again in 1962. And, in each case, won by B-58s flown by crews of the 43rd Bomb Wing at Carswell AFB, as was the case of the Bendix.

The latest Mackay Trophy presentation was made by Air Force Undersecretary Brockway McMillan on behalf of the U. S. Air Force Chief of Staff, whose office is permanent custodian of the three-foot-high masterpiece in silver.

Explosives Used in New GD/FW Welding Process

Explosives that usually wreak havoc on everything within the range of their blast are being given a reverse twist at General Dynamics/Fort Worth.

Now they're being used—under controlled conditions—to explosively join together metals that heretofore just wouldn't join. Or to join shapes that otherwise couldn't be satisfactorily achieved by any other known process.

For a handy handle, the new process—still in the experimental test stages—is called explosive welding.

"That's because," says R. K. May logically, "the joining together is produced by an explosion. And the end result is a weld of the two metals."

May is GD/Fort Worth chief of applied manufacturing research and process development.

The explosive welding concept at GD/Fort Worth evolved when engineers, during the early days of working with the Dynaform process, found that in some instances the parts they were forming became welded to the dies, according to Don Cole, manufacturing research engineer.

"This indicated clearly that explosive welding could be done intentionally," said Cole. "And at that time, photographic and written records were entered as documentation to support a General Dynamics proprietary interest and patent right in the process."

Explosive—65 per cent blasting gelatin, for example—is applied to one of the two surfaces to be welded. The two surfaces are placed close together. The explosive is fired.

An example of welding ordinarily incompatible alloys—alloys that cannot be satisfactorily welded by other methods—is the explosive welding of two different aluminum alloys. On one demonstration, engineers welded spiraling aluminum fins made of one alloy to an aluminum tube made of another alloy.

Lunch Hour Shifted

Lunch hours for GD/Electronics people at Plant 1 were changed early this month to ease congestion of cafeterias.

Operations, material, reliability and quality groups in Bldgs. 51 and 4 now have their lunch time from 11:15 to 11:45 a.m.

With Our Deltas

Pilot and F-106 Pass 1,000 hrs., Same Flight

A pilot of the 456th Fighter-Interceptor Squadron, Castle AFB, Calif., Capt. Ervin W. Barnes, became the first Air Force man to log 1,000 hours in the Convair-built F-106, and his plane was the first F-106 to pass the mark. It was reached on the same training mission.

Capt. Barnes started piling up hours in the Convair jet interceptor late in 1959 after checking out in the F-106 at Castle. It took about 750 missions for him to reach the record. The bulk of the hours were logged in other F-106s, but both the record-breaking pilot and plane probably will be teamed on future training sorties.

Following his historic flight, he was greeted by Lt. Col. John H. Rogers, who recently became commander of the 456th, and GD/Convair and Hughes Aircraft Co. technical representatives.

Charles W. Stevens, field service rep. for GD/Convair, presented Capt. Barnes with a set of cuff links and a tie clasp with engraved membership in the "1,000 Hour Club," a club with but one lone member so far.

* * *

James W. Day, GD/Convair field service representative, recently was awarded the Air Defense Command Commendation Certificate by the Commanding General of the New York Air Defense Sector for his four years' service with the 539th Fighter-Interceptor Squadron, McGuire AFB, N. J.

The citation accompanying the award cited Day for his "technical knowledge and outstanding devotion to duty, which aided materially in the successful scheduled completion of the F-106 Category III testing, and in the successful completion of two major F-106 modification programs since its acceptance by the Air Force."

He was credited with helping the 539th FIS attain a steadily increasing operationally ready rate while supporting an increased flying hour program.

"He reflects considerable credit on the General Dynamics Corporation and has contributed greatly to the high reputation of the organization and the New York Air Defense Sector," the citation concluded.

* * *

Ten Convair-built F-106 jet interceptors have been assigned to Elmendorf AFB, Alaska, in a temporary deployment to strengthen northern defenses. The 317th Fighter-Interceptor Squadron at Elmendorf has been equipped with F-102s since 1957.

Pilots of the F-106 contingent are all members of the 325th Fighter Wing, McChord AFB, Wash. Lead aircraft in the mid-July flight north was piloted by Lt. Col. Eugene L. Surowiec, whose 498th FIS was transferred to McChord from Geiger Field.

The McChord reinforcements are assigned to the joint Alaskan Command under Lt. Gen. George W. Mundy.



Reading from the top down: (1) Brig. Gen. F. W. Gillespie, 86th Air Division commander, receives F-102 lapel pin from O. B. Johnson, GD/Convair field service rep, following checkout in interceptor at Ramstein Air Base, Germany. In center is Lt. Col. Gordon H. Scott, 526th FIS commander.

(2) Capt. Ervin W. Barnes received "Thousand Hour Club" membership from Lt. Col. John Rogers, 456th FIS, commander, after both he and his F-106 passed mark. At left is Charles W. Stevens, GD/Convair rep at Castle AFB; at right is Lee Williams of Hughes Aircraft.

(3) GD/Convair field reps J. E. Dodge, left, and H. P. Vinz, right, renew acquaintance with Maj. Gordon Reese at Camp New Amsterdam, Netherlands, recently when he reached 1,000-hour mark in F-102.

(4) GD/Convair's Jim Day is assisted by Lt. Col. Duncan C. Myers, commander of 539th FIS, in hanging award Day received in recognition of service with F-106 squadron.

GD/Convair Art Chief Designs Panorama For NY World Fair

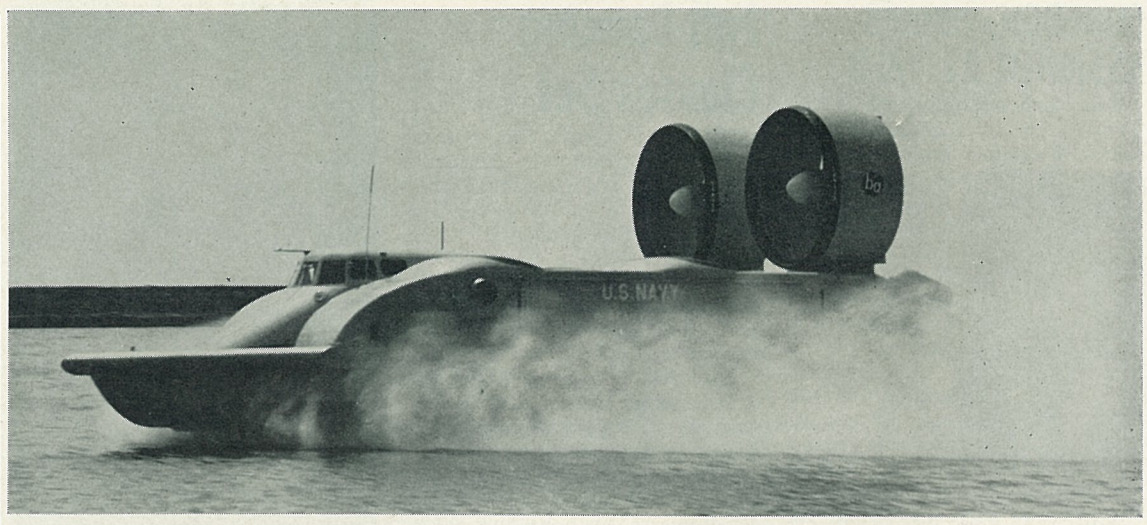
A dramatic panorama of historical scenes, highlighting the past, present, and future of the United States, designed by P. J. Fitzgerald, supervisor of art and editorial section at GD/Convair, may be included in one of the attractions at next year's New York World's Fair.

Three-dimensional environments for a 15-minute ride through the country's history were sketched and designed by Fitzgerald at the request of Cinerama Camera Corp., in charge of the feature under a Dept. of Commerce contract. The attraction will be called the United States Pavilion.

First navigators, sea monsters, discovery and settlement of America, early inventions, development of communications and transportation, and projection into the future realms of space are graphically portrayed in the march of history.

Scenery will cover the entire four walls of the ride enclosure. Each side will be 335 feet long and 35 feet high.

Fitzgerald was assisted by Roger Magee of Magee-Bralla, Inc., San Diego design firm, in construction of the ¼-scale models submitted for approval.



AN AIRY RIDE—Electric Boat division of General Dynamics built four lift fans for this Hydroskimmer, shown riding an air cushion 18 inches above Lake Geneva, N.Y. High speed experimental craft was built for Bureau of Ships by Bell Aerosystems of Buffalo, N.Y.

FRENCH 'SPEAKING' COMPUTER LEASED

General Dynamics/Electronics —San Diego has leased an S-C 4020 High Speed Computer Recorder to the Commissariat a L' Energie Atomique, Paris, France.

Delivery is scheduled for October.

In Paris, the S-C 4020 will "speak" French. Since the French alphabet is the same as the English, no changes will be made in the standard character set built into the recorder. Results will merely appear in the French language on the face of the CHARACTRON^{R} Shaped Beam Tube.

Earlier this year, Great Britain's United Kingdom Atomic Energy Authority leased an S-C 4020 unit—the first such system in Europe.

In addition to many industrial S-C 4020 users, units are now in use by the following governmental organizations: Applied Mathematics Laboratory, David Taylor Model Basin, Carderock, Md.; Los Alamos Scientific Laboratory, Los Alamos, N.M.; North American Aviation, Los Angeles, Calif.; GD/Astronautics, San Diego, Calif.; Jet Propulsion Laboratory, Pasadena, Calif.; National Aeronautics and Space Administration, Huntsville, Ala.

Heller Named To Value Panel

E. D. Heller, General Dynamics/Astronautics manager of value control, has been invited to serve as a regional panelist at the joint Department of Defense-National Security Industrial Association symposium in Los Angeles next month.

The session at Los Angeles' Biltmore Hotel, Sept. 18, is one of five such symposia scheduled this month and next at major U. S. industrial centers.

Purpose of the meetings is to present Defense Department policies and objectives, and industry's views and experience in the utilization of value engineering as a systems management tool.

Assistant Secretary of Defense Thomas D. Morris heads an impressive list of speakers participating. Taking part as an industrial panelist at all sessions is C. W. Doyle, procurement value control administrator, GD/Fort Worth.

EB Hiring, Goes To 9 Hr. Shift

Most production employees at General Dynamics/Electric Boat went on a basic nine-hour shift this week in order to meet revised submarine delivery schedules.

The shipyard will also hire additional skilled shipfitters, welders, outside machinists, outside electricians, sheetmetal workers.

In announcing the basic nine-hour shift, J. William Jones Jr., Electric Boat president, said a review of immediate and long range production schedules and a careful assessment of the changes ordered by the Navy and their impact on delivery dates showed an "urgent need to increase productivity in order to meet the revised schedules."

'Station Keeper' Designed by GD/E Aid to Aircraft in Formation

A new radar system designed by General Dynamics/Electronics —San Diego can pinpoint exact position of aircraft flying close formation in all kinds of weather, or at night.

The Aircraft Station Keeper (ASK) radar system automatically provides position data over a full 360 degrees around the aircraft and gives each aircraft using the system a pictorial display of all other aircraft within the formation.

The compact, low-power system is essentially a combination of transceivers and display devices installed in a "cooperating" aircraft. The two units which make up the system will occupy only 1/4 cubic feet of space, weigh 16 pounds, and have a power drain of 50 watts.

ASK is designed for use in all types of military aircraft, including helicopters and supersonic jets and will handle 10 or more aircraft depending upon formation pattern, explained J. B. Gehman, GD/E engineering staff specialist who has spearheaded development. Gehman is presently acting project engineer for the ASK system. Marshall Bear of engineering research has been associated with Gehman on the program.

In addition to position data, the technique can be used to provide information for takeoff, landing, and in-flight rendezvous where a zero range measurement is an important feature. Altitude reference also can be included.

Radar specialists at GD/Electronics indicate the ASK system has a substantial growth potential, since the system is expandable for automatic operation when used with an autopilot.

GD/E Projects at San Diego Demonstrated For Navy Team

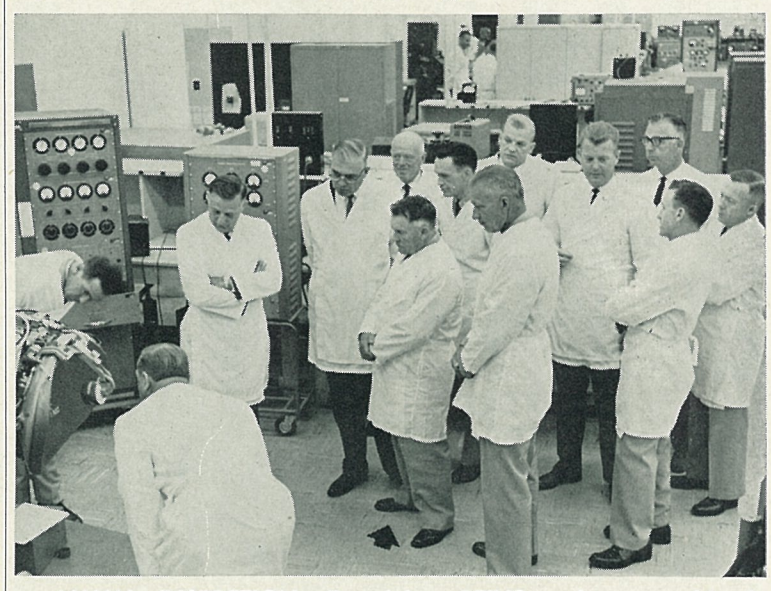
High ranking Naval officers received a one-day briefing on products and capabilities of particular interest to the Naval Air Force at both San Diego facilities of General Dynamics/Electronics the first of this month.

Vice Adm. P. D. Stroop, USN, commander, Naval Air Force, Pacific, headed the visiting team. Others were Capt. N. R. Richardson, USN, deputy, Bureau of Naval Weapons Fleet Readiness Representative, Pacific; Capt. B. K. Beaver, contract support officer, staff, BUWEPSFLT READ REP PAC; W. S. Burlem, chief engineer, engineering division, staff, BUWEPSFLT READ REP PAC; Cdr. R. A. Evans, BUWEPSREP, San Diego; Cdr. E. Frankiewitz, assistant BUWEPSREP; Lt. Cdr. J. D. Ness, operations, CIC, CCA, ECM, training officer, staff, COMNAVAIRPAC; Lt. Cdr. W. H. Todd Jr., technical supervisor, instruction team, staff, COMNAVAIRPAC.

GD/E General Manager John L. Lombardo outlined the division's functions at the general conference preceding briefings on specific projects now under way at both Plants 1 and 2.

Such newly-developed research and engineering projects as Aircraft Station Keeper Radar, Short Pulse Radar, Terrain Following Radar systems at Plant 1 and data products, and their Naval applications, at Plant 2 came under scrutiny. The Naval team toured assembly areas at both plants during the afternoon.

GD/E men conducting the briefings and tours included J. L. Brooks, J. B. Gehman, R. R. Apgar, J. H. Thompson, D. C. Newlon, R. F. Schillinger, A. H. Wisdom, J. C. Mitchell, J. H. Redman, J. W. Colvin, J. G. Melvin, C. V. Shannon, R. A. Glaeser, J. N. Mac Innes, requirements engineer-Navy, coordinated arrangements.



NAVAL INSPECTION—Examining REINS radar assembly in clean room of GD/E-San Diego during one-day visit are Vice Adm. P. D. Stroop, USN, (arrow); Capt. N. R. Richardson, USN, (standing at Admiral Stroop's left); Capt. B. K. Beaver, USN, (at far left bending over assembly), and other Naval visitors. J. L. Brooks, manager of engineering, and J. H. Thompson, manager of operations, conducted tour of assembly area.

CONGDON, HOINES ASSIGNED AT VAFB

Two key appointments within General Dynamics/Astronautics' Atlas Weapons System project at Vandenberg AFB were announced earlier this month by W. L. VanHorn, vice president and program director.



G. G. Congdon

G. G. Congdon was named manager of test and launch operations (AWS), replacing D. L. Fagan who was previously appointed director of GD/Astro's Pacific Missile Range operations.

A. H. Hoines has assumed new duties as AWS launch operations manager-PMR.

Congdon was born in Dallas, Texas, and attended San Diego public schools and the Universities of Wisconsin and Minnesota. Following graduation, he took additional studies at University of California, Berkeley.

He joined GD/Convair as a flight analyst in 1948, transferring to the Model 7 (Atlas) program in 1956 as a research engineer. At GD/Astro he subsequently served in various engineering capacities, including chief engineer-design support.

Hoines is a University of Minnesota graduate. He served as a naval aviator in 1942-45, and again in 1952-54 with the rank of lieutenant commander.

His General Dynamics service dates from 1955 when he joined GD/Convair, transferring to GD/Astro as senior flight test engineer at Vandenberg AFB in 1959. In 1961 he was named test conductor there.

Wives Will Sponsor Regular Bowling

Astronautics Wives' Club will again sponsor an all-wives bowling league meeting at 9:30 a.m. each Tuesday at Clairemont Bowl, according to Director Ann Ragusa.

Initial league action begins Sept. 17.

All wives are invited to turn out. Advance registration is possible through regular ARA bowling entry forms now available at all employee services outlets. However, no advance registration or previous bowling experience is required.

Last Performances Of 'Heiress' Slated

Final performances of Astro Players' production "The Heiress," a period drama, will be Friday and Saturday (Aug. 23, 24) at 8:30 p.m. in ARA Clubhouse, to end a seven show run.

Friday (Aug. 23) is "Family Night," with youngsters admitted free when accompanied by parents. Usual donations are $1 for adults, 50 cents for juniors.

Fall Dancing Classes Set

Plans for ARA's fall ballroom dancing program will be formulated at an organizational meeting to be held at 7:30 p.m., Sept. 16 in ARA Clubhouse.

"We will have a program consisting of 12 one and one-half hour lessons," said Commissioner Ludy Moeller. "Total cost will be $9 per person."

Just what level of instruction —beginning, intermediate or advanced—will be offered, will be determined at the meeting.

"It is possible that more than one evening per week will be available to us," Moeller added. "We need at least 17 couples in order to operate a class."

A complete program will be outlined and class assignments made at the September session.

City College Classes Begin

Seven San Diego City College courses will be offered to employees at GD/Astronautics' main plant beginning the week of Sept. 16, with registration scheduled at first class meetings.

Classes will meet in Bldg. 17, Plant 71, and are coordinated by GD/Astro educational services (Dept. 130-3). Pre-registration is handled by Laura, ext. 1935, who can also supply additional information.

Class titles, instructors, meeting days and times, and room numbers are:

Electronics (45), Herm Reichert, Tuesday and Thursday, 4:30-7 p.m., Room 8; Electronics (46), Bob Boring, Monday and Wednesday, 5-7:30 p.m., Room 9; Electronics (46), Dennis Suchecki, Tuesday and Thursday, 2-4:30 p.m., Room 9.

Also, Supervision (23) (Technical Writing), Bill Stewart, Tuesday and Thursday, 5-7 p.m., Room 2; Mathematics (17A) (Electricity and Electronics), Tom Ruse, Monday and Wednesday, 4:30-7 p.m., Room 2; Industrial Inspection, Bob Grunner, Monday and Wednesday, 4-6 p.m., Room 8.

Elementary Inspection (Detail) will also be offered.

Weight Engineers Extend Invitation

J. E. Muller, GD/Astronautics Dept. 663-5, and chairman of San Diego chapter, Society of Aeronautical Weight Engineers (SAWE) invites interested personnel to attend the group's next meeting Aug. 23.

The session will be held at Luby's Restaurant, Pacific Beach. Social hour begins at 6:30, with dinner at 7 p.m. Speaker will be George Cota of Ryan, discussing "Flexible Wing Development."

Fish Club to Present Awards For Catches

Next meeting of ARA Fishing Club will be held at 7:30 p.m., Sept. 4 in ARA Clubhouse.

Program will include presentation of button awards for catches made during August. Door prizes are planned.

Club jacket patches are expected to be ready by meeting time.



CAPE CONTROL—Newly-elected officers of AMR Astro Wives Auxiliary are shown following installation at dinner-dance. They are, from left, Mrs. R. E. Flanagan, corresponding secretary, Mrs. E. J. Hecker, treasurer, Mrs. R. H. Becker, president, Mrs. W. E. Apfel, recording secretary, and Mrs. R. S. Gehee, first vice president. Mrs. K. N. McCarthy, second vice president, was not present.



WATCHED — Jan Greer (Astro Dept. 124) was recently named "Miss Second Glance of 1963" by International Society of Girl Watchers. She appeared Aug. 20 on Steve Allen Show in Hollywood. — Photo by Joe Kayada, Astrolens.

Employee Services Offers Discount on Volumes by Ehricke

Employee services at GD/Astro has announced a special service to employees interested in acquiring all or part of a three-volume set of space flight books authored by Krafft Ehricke, Astro's noted space expert.

Two volumes are on the market, while the third is being published.

Employee services is ordering 20 copies of Volume I (Environmental and Celestial Mechanics) at an approximate list price of $16 each. Employees may buy it at a 20 per cent reduction. A $5 deposit will hold a copy until delivery is made, at which time the full purchase price, less discount, must be paid.

Volume II (Dynamics) will be ordered, if sufficient interest is shown. Approximate list price is $30, with a 20 per cent reduction available to employees. Those desiring this volume may register with employee services, Bldg. 8, Plant 71. A minimum of 20 copies must be ordered before the discount is available.

Details will be available later on Volume III (Operations).

Jr. Bowlers Sought For Saturday Loops

The call went out this week for youngsters, boys or girls from 8 through 18, interested in joining ARA-sponsored junior bowling leagues.

Leagues will begin rolling Saturday, Sept. 21, and bowl at 10:30 a.m. each week. Youngsters will be placed in leagues by age groups, in bantam and junior-senior classes.

At present only leagues planned will roll at Clairemont Bowl. However, ARA will consider sponsoring leagues at other locations, if interest warrants.

ARA-CRA Camera Club Will Meet in Park

The joint ARA-CRA Camera Club, open to all GD/Astro, GD/Convair and GD/E employees interested in still photography, will meet Sept. 1 at 7:30 p.m. in Balboa Park's Photo Arts Bldg.

Program will consist of a workshop session concentrating on lighted glassware and still life.

ARMY RESERVIST TAKES TRAINING

Robert C. West, master scheduler analyst in GD/Astro Dept. 362-3, recently completed an Army Reserve training stint at Fort MacArthur, Calif. West, a master sergeant, was assigned to the personnel section of the Army Reserve Training School for his two-week active duty period.

Skaters to Visit Big Bear Lake For Indian Summer Weekend

An invitation to "Indian Summer at Big Bear Lake" has been issued to all GD/Convair, GD/Astro and GD/E folk by the joint ARA-CRA Ice Skating Club.

The event is scheduled Sept. 20, 21, 22 at Big Bear's Wawona Lodge, site of similar outings over the past five years. Accommodations include hotel room with private baths for two, three, four or five persons, and housekeeping cabins for family groups.

Weekend activities will include swimming in Wawona's pool, hiking, horseback riding, cycling, ice skating, and an informal dance (with midnight pizza snack) on Saturday evening.

Per person price for the package of two nights' lodging and all meals is $12 (half price for children under 8 years). Meals again are under direction of Gil Hutter, Prophet Co. manager at GD/Astro.

Reservations (limited to a total of 100 persons) are being accepted through Sept. 13 at employee services offices at Plants 1, 71, and 19, with full price payable at time of sign-up.

Additional information is available from Barbara Gilliland, Astro Blades president, GD/Astro ext. 4041.

Club Seminars Start in Sept.

A trio of management seminars, open to all salaried employees at GD/Astronautics, GD/Convair and GD/Electronics are set to open in mid-September.

Sponsored by Astro's Management Club, the seminars are a part of a now-popular management development program that has drawn over 700 participants in the past five years.

Individual seminars will be held at Plant 1, Plant 19 and Plant 71 as interest dictates. Opening dates will be Sept. 17-18-19. Three different seminars are planned entitled: Principles of Managing; Issues in Modern Management; and Case Studies, Management Practice and Policy. The last two are 12-hour seminars, while the first continues for 20 hours.

Sessions will be held from 5 until 7 p.m. one night per week.

Individual registration sheets and information on the program will be provided club members. Other salaried employees at Convair and Astro may contact George Hunter, ext. 1576, Plant 19, for information.

Explorers Schedule Weekend Outings

Plans for two weekend outings have been announced by ARA Explorers Club.

On Aug. 31, a group of the club's heartier members will start a weekend back-pack expedition in the Santa Rosa mountains.

A less arduous trip is planned Sept. 7, with a one-day trail hike.

Information on Explorers Club is available from ARA Commissioner Herm Reichert, ext. 2607, or Paul DuPre, club president, ext. 4448.

ARA Hi-Fi/Music Club Schedules Concert

Another in ARA Hi-Fi/Music Club's series of free recorded concerts, this time "a night at the opera," will be presented in the group's ARA Clubhouse studio at 7:30 p.m., Aug. 28.

Featured work is a stereo recording of Rossini's "Barber of Seville" with Maria Callas, soprano, and Titto Gobbi, baritone, in leading roles. Others in the cast include Luigi Alva, Fritz Ollendorff, Gabriella Carturan and Mario Carlin.

Salvage Schedule For Aug., Sept. Set

Salvage yards at GD/Convair and GD/Astronautics will both take a holiday over the Labor Day weekend. There will be no employee sales at either yard on Saturday, Aug. 31. Regular alternate Saturday schedule will resume the following week.

Schedule is:

GD/Astro—Aug. 24, Sept. 7.

GD/Convair—Sept. 14.

Husband-Wife Team Scores in Garden Show

The husband-wife team of Charles (GD/Astro Dept. 759) and LaVonne (GD/Convair Dept. 2) Splinter dominated the joint ARA-CRA Garden Club summer show this month in Balboa Park's Floral Association Building.

They won four Best of Show awards (best large dahlia, best medium dahlia, best overall dahlia, best grapefruit), plus four first place, and six second place awards.

More than 1,500 visitors viewed the show's 150-plus entries, which included over 1,000 dahlia blooms, in addition to fruits, vegetables, arrangements and children's entries.

Largest dahlia entered was a white 14-inch Lulu Pattie nurtured by Mr. and Mrs. Clayton Finley, GD/Convair Dept. 14-3, who won a total of 10 ribbons.

ARA Club President Arnold W. Carroll (Dept. 141-2) and Mrs. Carroll carried away 31 ribbons and two Best of Show awards for best arrangement, and smallest dahlia.

Ten blue ribbons were among the 27 won by Mr. and Mrs. Albert Hornby, GD/Astro Dept. 972, while Henry Boyd, CRA Club president (Dept. 171) and his wife garnered 25 ribbons including Best of Show awards for best miniature dahlia and best tomato display.

Other Best of Show winners were Carolyn Buman, GD/Astro Dept. 341-0 (best onion display), C. V. Spear, GD/Astro Dept. 141-2 (best apple display), Jean Henderson, wife of ARA Commissioner Everett Henderson, Dept. 140-1 (best corsage), and Sherri Files, daughter of GD/Astro's Phyllis Files, Dept. 953-5 (best children's display).

Charles Barksdale, Dept. 15; Eugene Zimmerman, Dept. 401; Dennis Zimmerman; Bene Anello, Dept. 204, were GD/Convair blue ribbon winners.

Blue ribbon recipients from GD/Astro were Joe Bores, Dept. 986; O. J. Williams, Dept. 836; C. V. Spear, Dept. 141; Gale Short, Dept. 972; W. K. Spann, Dept. 953; Mary Short, Dept. 972; Richard Alianelli, Dept. 781, Nancy Alianelli.

Judges were Mr. and Mrs. R. M. Middleton of San Diego County Dahlia Society; Mr. and Mrs. J. W. Troxell, County Rose Society; Mrs. Jean Kenneally, San Diego Floral Association.

In addition to ribbons, Best of Show winners received silver serving ladles; first place winners, Hydromix garden sprayers; seconds, flower arrangement bowls; and thirds, redwood planting tubs.

Dynamics Men Active in SAVE

General Dynamics men dominate the slate of officers elected recently by San Diego Chapter, Society of American Value Engineers (SAVE).

A. S. Freedman, GD/Electronics manager of design assurance is president; M. D. Weisinger, GD/Convair, secretary; G. J. Bartolomei, GD/Astro, treasurer.

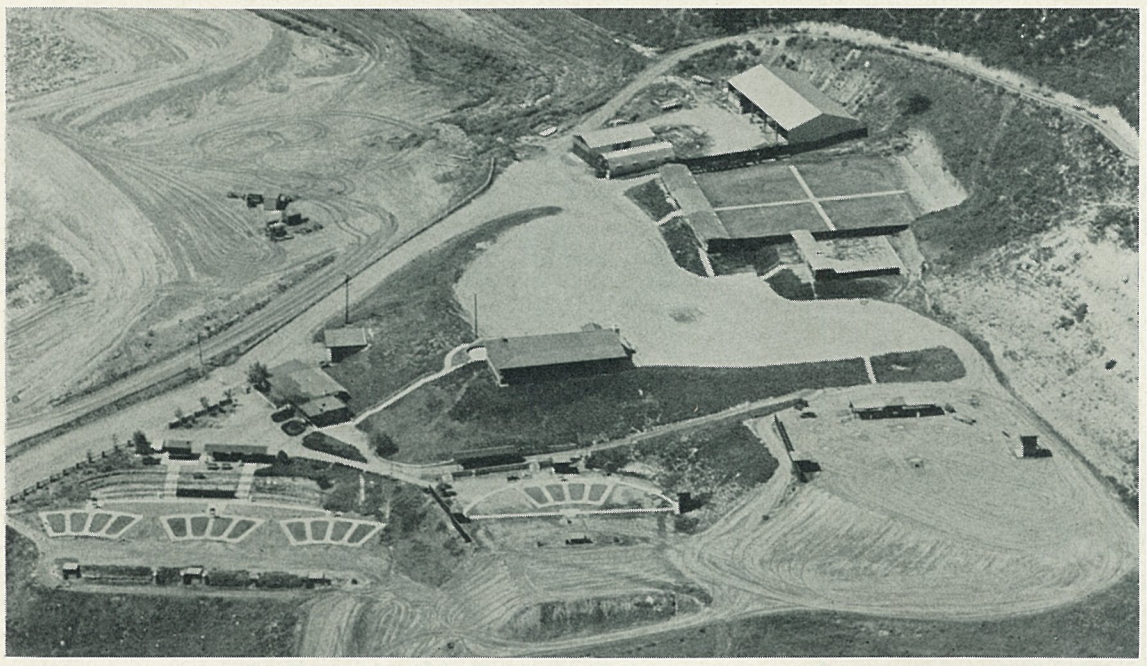
The group, organized about two years ago, now boasts a membership of nearly 70, of which two-thirds are General Dynamics employees.

Appointed to head local SAVE committees for the coming year are GD/Astro's E. A. Lindem (program), S. L. Albert (publicity), Frank Urban (membership), Wells Christie (rules and bylaws).

Bill Garrett of GD/E is chairman of the ticket committee, and a publications group is headed by A. R. Hermann of GD/Convair.

San Diego SAVE chapter is open to all interested persons, and membership is not restricted solely to professional value engineering personnel.

E. D. Heller, manager of value control at GD/Astro, is director for SAVE's southwest region, and was former SAVE national secretary.



GILLESPIE ON VIEW—Latest aerial shot of Convair Recreation Association's Gillespie Field gives panorama of diversified facilities which draw hundreds of GD people for sports and hobbies. Gun Range, most popular attraction, includes (in foreground) three trap ranges, combination trap-skeet range, and (upper right) 50-yd. rifle and 50-ft. junior rifle ranges. Beyond rifle range is boat building, sports car garage, quonset hut containing Rockhound lapidary workshop. Clubhouse is at lower edge of parking lot, and caretaker's home at base of hill along access road.—C. Robert Learn Photo.

Sports & Recreation

Joe Williamson Joins Council

Joe Williamson, who has been drilling bull's-eyes for so many years it's now a habit, has taken over the reins of the CRA Pistol Club as new commissioner.

In announcing the appointment, J. K. Field, manager of personnel services, lauded Ash Bishop Jr., commissioner of the target shooting club since 1950, for the many years he has directed activities. Bishop, now with GD/Astro, has resigned the CRA post.



Joe Williamson

Williamson joined GD/Convair in 1939 and is now assistant foreman in tool manufacturing.

He has taken part in San Diego and Convair shooting groups for the last 20 years. He first began target shooting about 1942 at the old West Coast Rifle Club, he recalls, and joined the first shooting activity at Convair in 1946, before the present Convair Recreation Association was established.

During the years Williamson has competed in Pistol Club matches, he has more often than not shot down the competition and has been practically a permanent fixture on the club's No. 1 pistol team for the last 10 years.

He doesn't confine his marksmanship only to target practice, as he stalks the big game every hunting season. He has hunted in most of the Western states and downed javelina in Arizona, antelope in Wyoming, elk in Idaho, deer in California, Utah, and Colorado.

The new Pistol Club commissioner issues a blanket invitation to all GD/Convair and GD/E shooting enthusiasts to turn out at the twice-a-month events held second and fourth Sundays at the San Diego Police Pistol Range.

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Joe Williamson celebrated his appointment as new commissioner of the CRA Pistol Club by again taking top spot in both events in Aug. 11 competition.

Williamson (Dept. 401) scored 292 in the .22-cal. Police Course and had four Xs, or bull's-eyes, to beat out Jim Halfacre (Dept. 140) for first place in center-fire Short National.

W. G. Walker (Dept. 6) placed second in the Police Course with a 285. Ralph Picard (GD/Electronics) was third, 281; Halfacre, fourth, 279.

Picard and Walker were third and fourth, respectively, in the Short National.

Picard has joined Williamson, Halfacre, and Walker on the club's pistol team which represents the group in all outside competition. He replaces Vern Mardis.

Horsemen Planning Labor Day Weekend Trek in Cuyamaca

CRA Commissioner V. V. Thomason said that the club's fall potluck dinner and dance will be held Saturday, Sept. 14, at Gillespie Field Clubhouse from 6 p.m. to midnight.

Turner Albright of Dept. 93 is chairman of the annual get-together and Mattie Wescott is in charge of food arrangements.

The regular Sept. 5 meeting has been cancelled.

Horsemen and families of CRA Riding Club will have a holiday outing over the Labor Day weekend in Cuyamaca Park.

Luke Barbour, Dept. 171, chairman of the trail ride and camp-out, said that several of the group intend to set up camp Friday night, Aug. 30, at Los Caballos Campgrounds. Late arrivals will meet Saturday morning at Hulburd Grove, Descanso, and ride on to Los Caballos to join them.

Barbour and other musicians of the Riding Club Combo will play for a Saturday night dance. The weekend will be topped off with a Sunday trail ride.

All GD/Convair and GD/Electronics people are invited to join the ride from Hulburd Grove and take part in the fun at Los Caballos Saturday night.

ARA Travelers Head For Vegas

Travelers participating in ARA's recently announced bus trip to Las Vegas will head for a different "port" when they get under way Sept. 20.

Accommodations for the current trip will be at the new Tally-Ho Hotel in the heart of the Las Vegas "strip," which offers golfers a 9-hole, par-3 course.

The Sept. 20-22 trek has a package price of $25 per person, including bus transportation and double-room accommodations. For $2 per night extra, single rooms can be arranged.

Reservations are now being accepted at employee services, Bldg. 8, during regular sales hours.

Solo Flyers School Depends on Sign-ups

There are still openings in the Solo Flyers ground school which will start this fall if enough sign, said Harold G. Ayer (Dept. 6), club president.

The 14-week instruction would lead to qualification for private pilot's licenses.

Anyone at GD/Convair and GD/Electronics plants is eligible. Call Ayer, ext. 2678, Plant 1, to register.

CRA Golfers Warned To Heed Ball Marks

CRA golfers are reminded to pay more heed to repair of ball marks on greens.

Ken Wulfemeyer, golf commissioner, commented: "I played in the last CRA foursome Aug. 10 at Bonita CC and I was disappointed by the many unrepaired divots, left by golfers ahead of us. This is no way to influence golf clubs to welcome us back."

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m. to 1 p.m., Clairemont Mesa Flying Site.

BOWLING—Registration open for winter leagues starting first week in September. Call CRA office, ext. 1245, Plant 1.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master Points play next Wednesday (Aug. 28).

CAMERA CLUB—Joint CRA-ARA meeting Sept. 1, 7:30 p.m., Photo Arts Bldg., Balboa Park. Workshop session with lighted glassware and still life objects.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA meeting Sept. 4, 7:30 p.m., ARA Clubhouse.

GUN CLUB—Registered skeet shoot Aug. 25, Gillespie Field Range.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children, 25¢.

PISTOL CLUB—Regular club shoot Aug. 25, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Aug. 22), 8 p.m., Harbor Drive headquarters.

RIDING CLUB—Trail ride and camp-out in Cuyamaca Park over Labor Day weekend.

SOLO FLYERS—Anyone interested in ground school course call Harold Ayer, ext. 2678, Plant 1.

TENNIS—Registration open for IRC tennis tourney Sept. 28-29, Oct. 5-6. Entry forms at GD/Convair employee services.

WATER SKI CLUB — Weekend skiing on phone call basis. Call Jack Loos, ext. 1437, Plant 1.

GD/E and GD/Convair Keglers Sign Up For Winter Leagues

Bowlers at GD/Convair and GD/Electronics can sign up for the winter season, due to start the first week in September, said Co-commissioners Jim Hayman and Mike Brooks.

Entries will be accepted up to start of play for the following leagues:

Tuesday—700-750 Mixed Handicap, University Lanes. Call H. Skilton, ext. 2461, Plant 1.

Wednesday—700-750 Mixed Handicap, Pacific Recreation. Call Hayman, ext. 1241, Plant 71.

Wednesday—La Mesa Classic for bowlers of 175 and over, La Mesa Bowl. Contact Brooks, ext. 410, Plant 2.

Thursday—740-760 Mixed Handicap, Frontier Lanes. Call Hayman, ext. 1241, Plant 71.

Thursday—Mixed Foursome, Victory Lanes. Call F. Colianna, ext. 1126, Plant 1.

Friday—850 Scratch or 510 Trio, Pacific Recreation. Call Brooks, ext. 410, Plant 2.

Friday—Women's Trio Handicap, Pacific Recreation. Call Brooks.

All leagues start bowling at 6:30 p.m. except the La Mesa Classic which bowls at 9 p.m.

Cox' 76 Leads Bonita Golf

Gerry Cox led the field at CRA's last links tourney with low gross score in the top flight.

Cox (Dept. 101) stroked a 76 over the Bonita Valley Country Club course in Aug. 10-11 play.

Second low gross score of 79 was held by Norman Kuntz (Dept. 115).

Low nets in the 0-15 flight were Fred Swope of GD/E, 70, and M. M. Hill (Dept. 400), 72.

Other winners were:

16-23 flight—Hugh Wilkerson (Dept. 140), first low gross, 86; George Kureri (Dept. 401), second low gross, 93. Curt Tanner (Dept. 6) and George Watson (Dept. 400) tied for first low net with 74s.

24 and over—R. S. Wilson (Dept. 6), first low gross, 97; Jack Johnson (Dept. 6), second low gross, 98; Howard Wilson (Dept. 115), first low net, 72. A. Van Horn (Dept. 400) and Fred Maus of GD/E tied for second low net, also with 74s.

There will be no CRA tournament in September, said CRA Commissioner Ken Wulfemeyer. GD/Convair and GD/E golfers will be perfecting their strokes for the annual plant championship at Carlton Oaks.

IRC Sets Dates For Net Tourney

Tennis enthusiasts at GD/Convair, GD/E, and GD/Astro at Plant 1 will have a chance to compete in the annual IRC tennis championships if they sign before Sept. 23.

The 1963 tournament is set for Sept. 28-29, Oct. 5-6 at Morley Field. CRA will pay half of the entry fees, which are $3 for singles and $4 per team for doubles.

Awards will go to winners and runners-up in singles, doubles, and winner of consolation singles.

Players must team up with employees of the same plant. No entries will be accepted without listing of partners.

Entry forms are now on hand at GD/Convair employee services, ext. 1245, Plant 1.

Two GD/E Teams Meet in Finals

Two GD/Electronics teams are battling for the championship title in final play-offs this week as the plant "slow pitch" softball tourney comes to a close.

GD/E Purchasing won the American League title by beating out Fire Dept. by 8-3 in a play-off game Aug. 13. Both had tied with 6 wins and 3 losses at the end of scheduled play.

Tool Store 25 was in next spot with a 5-4 record. Fabrication trailed with 1-8.

GD/E Material Control was unchallenged in National League final standings when it emerged with a 7-2 score.

Hi-Lows was just one game behind, 6-3. Accounting dropped 5 and won 4. Material was last with a 1-8 standing.

GD/E Purchasing and GD/E Material Control were to be pitted in Aug. 15 and 20 play-offs to decide the champ. The series may go all the way with a third game Aug. 22 if they split the first two.

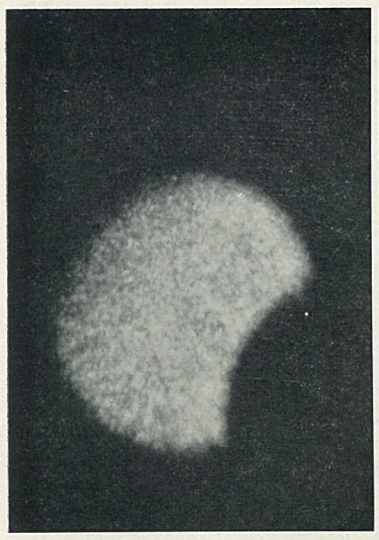
Free Swim Sessions Close For Season

Last Saturday's family swim night was the last free session for General Dynamics people this season, said Pete Beyrer of CRA office.

Mission Beach Plunge, where the monthly swims are held, will be closed this fall for its annual renovation. Free swimming will be scheduled again after the first of the year.



ROUGH ROGUE AHEAD—More than 20 teen-agers of GD/Convair Management Club-sponsored Air Explorers Squadron load their gear for trip to Grant's Pass, Ore., where they embarked on 90-mile rough voyage down Rogue River early last week.

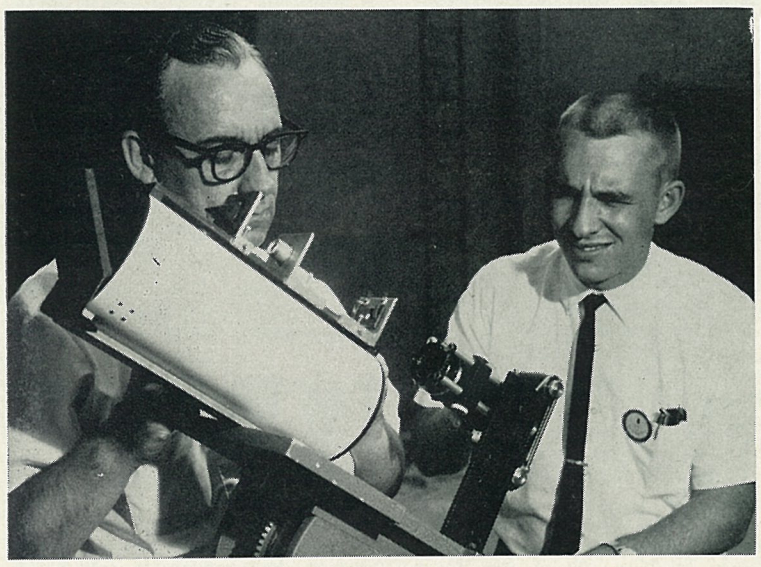


ECLIPSE—Photo shot at precisely 2:03 p.m. coast time July 20 with special equipment assembled at GD/Pomona, shows how sun looked during eclipse.





SUN CHASING—American Airlines took more than 70 newsmen, photographers and scientists to 35,000 feet July 20 in a 990 Astrojet, built by GD/Convair, giving them a front seat for eclipse of sun. At right is Frank Hurley of New York Daily News aiming camera. Flight was over Bangor, Me. Takeoff photo shows Astrojet similar to one used for eclipse flight.



VIEWER—Recent partial eclipse of sun as seen at Pomona was photographed with aid of solid state image converter developed by GD/Pomona's physics and infrared section. Image converter panel is located immediately in front of camera. Geoffrey C. Knight, senior physicist, left, and Robert MacFarlane, inspect equipment.

'Solid State Image Converter' Used to Photograph Eclipse

The recent eclipse of the sun was photographed at GD/Pomona with aid of a "solid state image converter" developed and constructed by the physics and infrared section.

"It is believed that this is the first application of a solid state device for purpose of photographing a high intensity source," R. J. Sneed, physics and infrared section head, said.

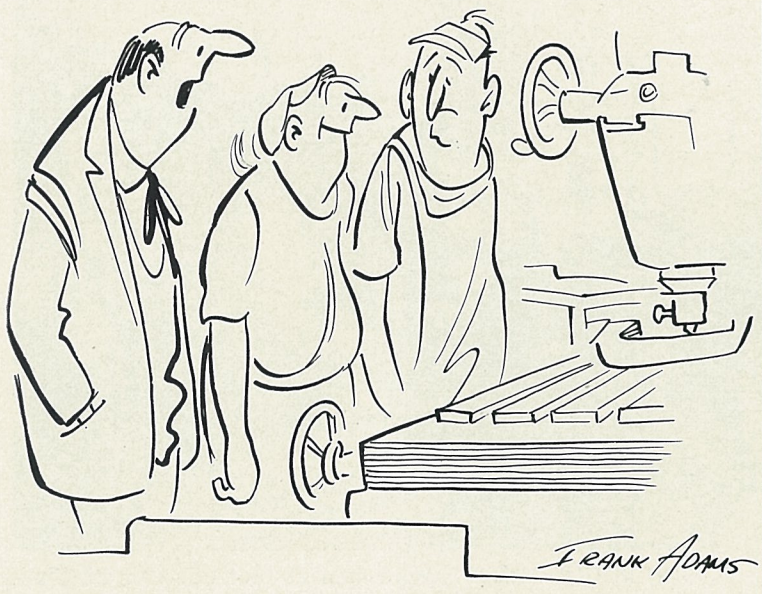
The device used for photographing the eclipse at Pomona is a visual-to-visual converter. On the same principle a converter can be constructed which produces a visible display of objects observed in the ultraviolet or infrared portion of the spectrum.

Advantages of this type of device and its potential applications are numerous. An object is viewed at all times indirectly and output intensity at the observer side can be limited to tolerable levels. This affords protection to any detector—human eye or photoelectric sensors. The converter also has inherent light amplification capabilities which permit observation of very low intensity sources without affecting the high intensity protection.

Basic configuration of the image converter is a sandwich consisting of a photoelectric layer on the object side and an electroluminescent layer on the observer side. An opaque film between these two layers prevents optical feedback.

Voltage is applied to both sides of the sandwich by means of thin metallic electrodes. The entire unit represents a network in which the incident light controls, locally, the resistance in the photoelectric layer. This in turn controls the field across the electroluminescent layer on the observer luminescent output, or brightness, at the observer side. Particle size, film thickness of the active layers, and similar parameters control resolution of the converter.

The image converter is presently being developed at GD/Pomona for the U. S. Army Quartermaster Corps.



"Can you put Mrs. Brown on a machine that will give her something to think about while she talks?"

Production Steps up at New Plant Of Electro Dynamic in Avenel, N.J.

Wheels are turning at Electro Dynamic Division of General Dynamics Corporation this month as production steps up in the new home plant at Avenel, N.J.

Equipment was moved in and positioned by the end of July and first cuts made as the General Dynamics division swung back from the April fire which razed its former plant at Bayonne, N.J.

The Avenel plant is in limited production now and will be in full production this fall, said Raymond B. Carey Jr., president.

Electro Dynamic produces electric motors and generators for defense and industry.

In reviewing the strides made in the weeks since the fire, Carey stated that in the long run the division will be a greatly improved operation.

"Starting fresh, we have done everything possible to improve work flow, materials handling and production methods.

"I'm sure this will pay off in better service for all our customers."

Manufacturing operations are carried on in five major buildings of the Avenel plant, acquired from Art Metal Corp. Office area is on the second floor of Bldg. 1 and executive offices are located in the administrative building at the entrance to the plant.

Aside from repainting, little renovation was needed in the main plant area. The Bldg. 1 office space was refurbished and air conditioned.

Floor space was being blocked out for Electro Dynamic's operations even as Art Metal was moving its equipment out. And, layouts were firmed to meet schedules for unloading machinery from railroad cars at one end of the plant.

Milton Hangen, GD/Convair industrial engineer, was recruited to help lay out the plant. Working with George Dillin, chief industrial engineer for Electro Dynamic, and Mike Yackmetz, assistant plant superintendent and their staffs, Hangen started with bare floor space. All departments outlined their functions and requirements, and shifted templates back and forth on the master plan to try out various arrangements for the most efficient layout of operations.

Everyone put in long hours and bent every effort to get the job done as quickly as possible. Hangen, a 30-year General Dynamics man, said that he had the utmost cooperation from every person at Electro Dynamic, and thoroughly enjoyed his six weeks at the sister division.

Carey, in a letter to GD/Convair President J. H. Famme, commended Hangen for his assistance, "Thanks so much for sending us Milt Hangen. His services in connection with the layout of our new facility at Avenel were invaluable."

All GD divisions gathered together to help put Electro Dynamic back into production. Nearly three-fourths of needed machining tools and office equipment was sent from other GD plants all over the country. The balance was made up of a small number of items salvaged from the fire; specialized tools made by Electro Dynamic itself; and other standard machine shop tooling, not obtainable elsewhere, purchased new.

Adv. Products Moves East

Advanced Products, developer and distributor of Dynapak metal forming machines, has been transferred from San Diego to Electro Dynamic Division at Avenel, N.J.

Manufacture, engineering, administration, and sales of Dynapak will be assumed by the New Jersey division. Up until now, actual assembly of the revolutionary high-energy-rate metalworking machines had been subcontracted to other firms.

The present move will place Dynapak closer to the major Eastern market, explained R. B. Carey Jr., Electro Dynamic president.

Advanced Products personnel transferred to Electro Dynamic jurisdiction include the entire sales staff under Warren G. Mang, general sales manager, who had been based at New York.

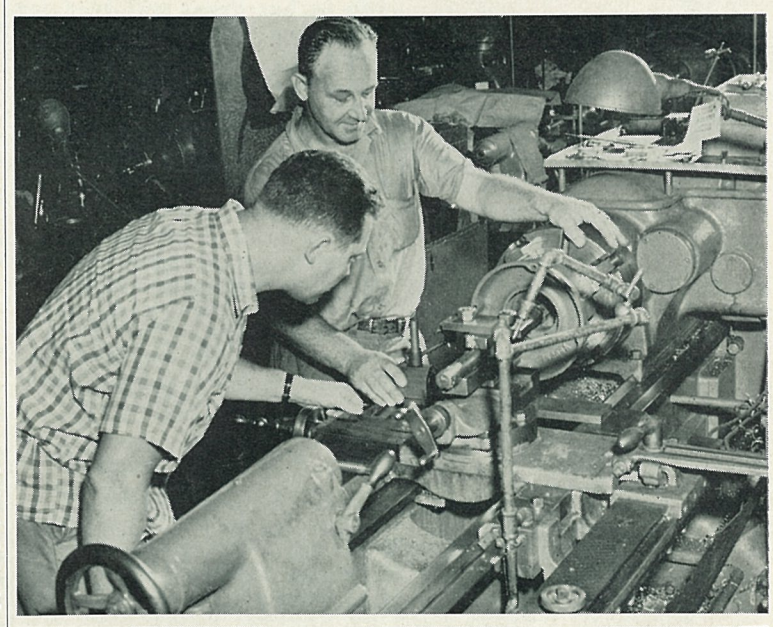
Sales representatives will keep their present assignments in different sections of the country. They are: T. J. Critton, Cleveland, Ohio; M. H. Stevens, Los Angeles, Calif.; I. J. Uslander, Chicago, Ill.; R. J. Wagner, New York City.

Others going from San Diego to the East Coast division are Milton Chanin, chief engineer; B. C. Dunn, service manager; S. W. Gilberg, manager application engineering; A. F. Stratton, project engineer. R. A. Kiefelhorst, chief of operations since 1960, will integrate manufacturing processes at Electro Dynamic.

Advanced Products department, which has been located at the San Diego seaplane ramp since early 1961, has been under direction of M. J. Gallagher, general manager since early last year. Both Gallagher and Mang have been with the facility since its formal establishment in 1958.

The Dynapak project, which resulted in the unique concept of metalworking machine, began at Pomona, Calif., with a two-person staff in 1955. At its peak, the facility had an employment of 65 persons.

General Atomic Division of General Dynamics Corporation, which has shared the ramp building at San Diego the last few months, will expand into space vacated by Advanced Products.





COMING BACK — In top photo, Inspector Herb Bracket of Electro Dynamic checks machine operation with Jim Hoffman at Peterson Tool & Die Co., Staten Island. Below, working out details for ED's new manufacturing facilities are Mike Yackmetz (asst. plant supt.), George Dillin (chief industrial engineer), Milt Hangen (on loan from GD/Convair), and Jim Ernst (sales dept.).

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 18 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, September 4, 1963

All-Automatic Escape Developed For F-111

The new F-111 tactical fighter's two-man crew will be provided with the most advanced escape and survival protection system yet devised, according to a press release from the Air Force Systems Command's Aeronautical Systems Division, Wright-Patterson AFB, Ohio.

McDonnell Aircraft Corporation is developing the system. General Dynamics/Fort Worth is prime contractor for the fighter.

Should emergency escape become necessary, the crew will take the entire crew compartment with them. This new technique calls for literally cutting the compartment away from the aircraft's fuselage.

The compartment will be severed in front of the instrument panel bulkhead, beneath the cabin deck, and just behind the pilots' seats. A portion of fuselage and wings will be included to provide in-flight stability.

Escape sequence begins with activation by either pilot or co-pilot. Two actions happen simultaneously.

A linear-shaped charge, described by ASD engineers as an "exploding wire," installed along the entire area of the escape pod, will detonate. At the same time the escape pod's rocket motor will ignite.

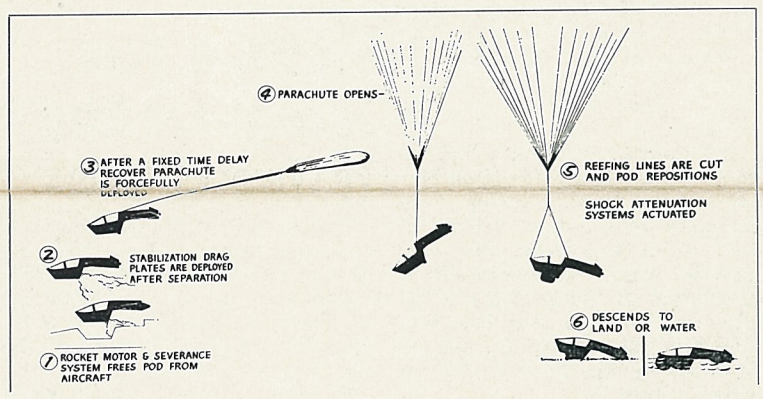
The charge will "cut through" supporting metal much like a welder's cutting torch; meanwhile the rocket motor will develop sufficient thrust to propel the crew compartment clear.

The crew will be safely separated with adequate environmental protection and all survival equipment. An emergency radio tranceiver will start broadcasting automatically.

The pod's recovery system will consist of two parachutes, a small drogue chute deployed to decelerate the pod during high speed ejection and a main parachute, similar to the one now employed by the Mercury space capsule.

To lessen landing jar, a shock-absorbing material will be attached to the bottom of the pod.

The escape system will provide the F-111 crew with an emergency capability to abandon the aircraft at any altitude and speed condition, including zero altitude/zero speed, and even under water.



SEQUENCE — Two-man component will separate entirely from F-111 in escape system, parachuting safely to earth or water.

Frank Davis to Speak For GD/Astro Mgt. Club

General Dynamics/Astronautics Management Club members will "Meet the Brass" at a meeting Sept. 18 in International Room, El Cortez Hotel, San Diego.

Keynote speaker is Frank W. Davis, GD/Fort Worth president, who will be joined at the head table by GD/Astro president J. R. Dempsey and his staff, J. H. Famme, GD/Convair president, and John L. Lombardo, general manager of GD/Electronics - San Diego.

Davis, a Dynamics veteran, served at Vultee Field, at GD/Convair, then at GD/Fort Worth as chief engineer before moving up to that division's top spot.

His talk, dealing with the TFX and B-58 Hustler, is titled "Airplanes—Texas Style."

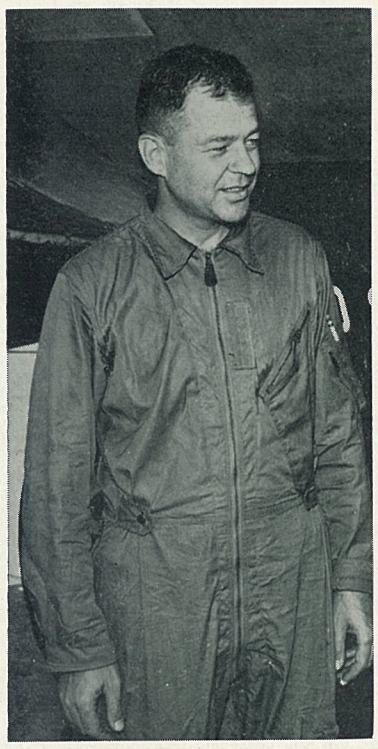
The meeting is sponsored by GD/Astro's advanced product planning under Vice President W. H. Patterson. Tom Wills is handling general arrangements with Frank Stoklas in charge of tickets, and the raffle under direction of Palmer Osborn.

Dempsey and his staff will field questions submitted in advance by Management Club members as another portion of the program.

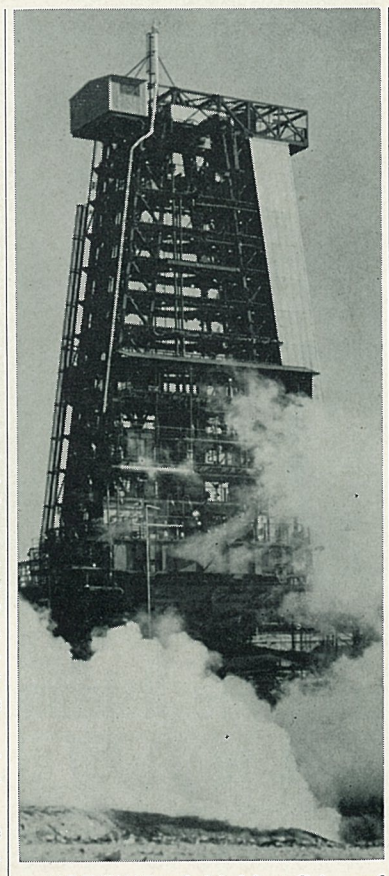
Pending appropriate clearance, an effort is being made to schedule a "world premiere" showing of the movie "Champion of Champions," a 28-minute film on the B-58, produced by GD/Fort Worth and narrated by Jimmy Stewart.

A sell-out crowd is anticipated, and those planning to attend have been encouraged to obtain tickets ($3) as early as possible from Management Club "Boosters" in their areas.

Professional performers will provide dinner music and entertainment throughout the evening.



SPEAKER — Frank Davis, GD/Fort Worth president, pictured here in flight suit after trip in B-58, will speak in San Diego Sept. 18.



HOT TIME—Initial hot firing of improved Centaur propulsion system was completed recently by GD/Astro personnel at Edwards RS. Flight-type vehicle is encased in tower for static tests. Dual hydrogen-fueled engines produce 30,000 pounds of thrust. Clouds here are steam from ejector system.

CANADAIR DEVELOPS BATTLEFIELD DRONE

Canadair Ltd. of Montreal is at work on development of the CL-89, an unmanned reconnaissance drone, backed by the Canadian Department of Defence Production and the British Ministry of Defence. The U. S. Army will provide firing range facilities and technical support.

F. R. Kearns, Canadair executive vice president, sales and finance, said the drone will perform reconnaissance duties in forward battle areas. It will be relatively cheap to build, compared to piloted aircraft, and will be expendable. The CL-89 began as a company venture in 1959 and is an original Canadair design.

Approximately 75 persons have been assigned to the project.

NOTS Leases 4020 For Novel Tasks

U.S. Naval Ordnance Test Station, China Lake, Calif. has leased an S-C 4020 High Speed Computer Recorder for use with the 7090 computer, General Dynamics/Electronics-San Diego announced this week.

The recorder will be employed in data reduction, ray tracing plots for lens design and plots for antenna patterns. Among other unusual applications, it will be used in plotting gravity meter readings on the Pacific Ocean floor.

GD/E at Rochester Wins Radio Contract

GD/Electronics at Rochester has been awarded a $537,000 contract by the U. S. Air Force for single sideband radio communications equipment to be used at missile installations.

Under the contract, one of a series of procurement contracts for single sideband radio made by various branches of the armed forces, production will begin immediately, with completion of shipments scheduled early in 1964.

Little Joe II Soars Aloft Successfully

A Little Joe II launch vehicle, designed and built by General Dynamics/Convair, scored a successful flight test last Wednesday over the remote White Sands (New Mexico) range.

The flight was conducted by National Aeronautics and Space Administration, assisted by Convair.

It was the first flight test operation directly applicable to the development of the Apollo spacecraft which will carry a three-man astronaut crew to and from the moon.

(NASA Little Joe tests are designed to proof spacecraft before they are sent on specific missions. Little Joe I, for instance, was used to test the Mercury spacecraft that later proved highly successful in manned orbital flights.)

The flight demonstrated the vehicle's structural integrity during the critical transonic and supersonic flight periods, Walter C. Williams, deputy director of the Manned Spacecraft Center at Houston, said shortly after the firing.

Only deviation from the flight plan was that the missile failed to heed the "thrust termination" signal, which was scheduled to precede destruction. The vehicle traveled to about 24,000 feet, reaching a top speed of Mach 1.1 (750 mph), and impacted about nine miles down range. The flight lasted about 42 seconds. Although all data had not been analyzed, it appeared that all objectives were accomplished with the exception of the thrust termination.

Seven solid-fuel rockets (one Algol and six Recruits) were used on the first launch. Ignited simultaneously, they generated 310,000 pounds of thrust to clear Little Joe II from its Convair-built launcher. In about two seconds the Recruit rockets burned out, while the Algol continued to produce thrust for about 30 seconds.

Despite its importance to the Apollo spacecraft development, Little Joe II represents a unique launch vehicle that is inherently reliable, versatile and relatively low in cost. All of its components are off-the-shelf items that have a long history of proven reliability.

The Little Joe II airframe is fabricated of low-cost corrugated aluminum alloy attached to a series of constant-diameter ring frames. There are two major sec-

(Continued on Page 2)

Big Empennage Awes Crowd at C-141 Roll-Out

A General Dynamics/Convair-built empennage all but stole the show Aug. 22 in Marietta, Ga., during official roll-out ceremonies for the new C-141 jet transport.

In Washington, President Kennedy touched a remote control to open hangar doors. As a crowd of over 2,000 watched, the big (145 feet long, 165-foot wing span) Lockheed jet emerged with the huge T-shaped empennage towering majestically above it.

Among key GD/Convair men on hand were D. C. Wilkens, director of industrial relations; J. M. Adamson, C-141 project manager; and Don Stewart, C-141 contracts administration.

The C-141 was called an airplane that is "more mule than race horse, more truck than limousine," easy and inexpensive to maintain, always ready to fly, and characteristically reliable and economical in the air.

GD/Convair shipped its initial empennage assembly in late March, then followed with the first production version in April. Both made the coast-to-coast trek via a hydro-cushion railway car.



ROLL-OUT—At Marietta, Ga., first C-141 (empennage built by GD/Convair) was rolled out of hangar Aug. 22, amid considerable fanfare. Shown alongside plane are J. M. Adamson, Convair program manager, left, and Dick Wilkens, Convair director of industrial relations.

AF Gives Full Support To Value Engineering

"The best-managed companies stand to gain by increasing their efficiency—and so does national security," said Air Force Secretary Eugene M. Zuckert in a recent address of major significance to General Dynamics/Astronautics.

Zuckert was referring to Defense Secretary Robert S. McNamara's Presidential charter to "eliminate 'gold-plating'" in defense procurement; to trim the "frills" from military hardware by analyzing its function, then achieving this function at the lowest overall cost.

The military profits in terms of better, more reliable equipment; the public gets more for its tax dollar; and contracting industries improve their competitive positions through increased efficiency.

At GD/Astro, one phase of the effort to achieve these ends takes the form of a full-scale value engineering program.

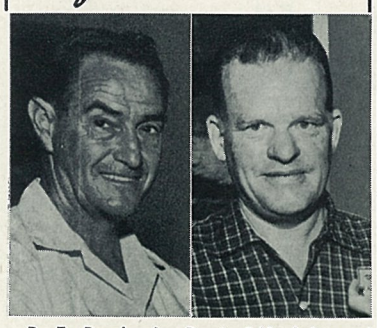
The Air Force Plant Representative's Office, commanded by Col. Malcolm K. Andresen, as well as GD/Astro management gave full support to a pilot VE seminar held earlier this year.

Seminar coordinator was E. A. Lindem, Dept. 130-3, with the program directed by E. D. Heller, manager of value control (Dept. 165).

Among participants were two AFPRO engineers (John B. Cianciarulo, production division, engineering branch, and Frank H. King, development engineering division), along with representatives of a cross-section of GD/Astro departments.

The seminar is expected to produce major dollar savings on projects explored by the eight teams taking part, and, in addition, the mutual Air Force-GD/Astro enthusiasm for this approach to reducing aerospace procurement costs has resulted in a new level of customer-contractor understanding.

Log Book Entries



R. E. Pendarvis, Dept. 141, left, and J. C. Brugger, Dept. 401, both GD/Convair veterans, received 25-year service emblems last month from W. R. Bruce, director of operations.

Service Emblems

CONVAIR

Service emblems due during the period Sept. 1 through Sept. 15.

Thirty-year: Dept. 6-2, H. A. Gibb.

Twenty-five-year: Dept. 6-1, J. E. Lampman; Dept. 133, J. R. Bailey; Dept. 171, J. L. Martin.

Twenty-year: Dept. 16-4, E. M. Flisrand; Dept. 102, Aureliano Hijar; Dept. 171, O. B. Carrera; Dept. 400-1, C. W. Stafford Jr.

Fifteen-year: Dept. 3, Alvina R. Sult, Annetta C. Sutherlin; Dept. 6-3, M. R. Addis; Dept. 14-4, P. G. Bieberdorf; Dept. 26-2, F. L. Stingley; Dept. 48-02, Irla C. Brugger; Dept. 171, A. E. Montgomery; Dept. 400-4, Anna L. Lindquist.

Ten-year: Dept. 3-5, Dorothy Ventura; Dept. 6, G. L. Picotte, J. E. Sanders; Dept. 14-5, G. E. Browne; Dept. 16, E. H. Carman, M. P. Robinson Jr., Jewell B. Williams; Dept. 25-5, R. T. Brown; Dept. 401-7, L. L. Morehous.

GD/ELECTRONICS

Twenty-year: Dept. 32-00, H. S. Morgan.

Ten-year: Dept. 21-00, Irene L. Duzyk; Dept. 41-20, J. R. Zak; Dept. 44-00, Betty A. Cherlin; Dept. 74-10, A. L. Weinstein.

Retirements

CONVAIR

ANDERSON—Willard D., Dept. 400-7. Seniority date May 29, 1950, retirement effective July 19, 1963.

CEDERBERG—Frederick H., Dept. 31. Seniority date Dec. 14, 1950, retirement effective July 30, 1963.

COOK—Evan E., Dept. 25-7. Seniority date Sept. 24, 1951, retirement effective July 22, 1963.

HECKMAN — Paul J., Dept. 48-52. Seniority date April 21, 1950, retirement effective July 5, 1963.

MACHADO — Manuel P., Dept. 21. Seniority date Jan. 12, 1953, retirement effective June 25, 1963.

SHEPARD — Nina S., Dept. 215. Seniority date April 5, 1951, retirement effective June 28, 1963.

WILSON—Lester E., Dept. 115. Seniority date Feb. 20, 1953, retirement effective July 24, 1963.

Personals

SAN DIEGO

We wish to thank friends at Convair for the flowers and cards of sympathy received upon the death of Cecil L. Polsley.

Florence Polsley and family.

* * *

I would like to express my heartfelt thanks to GD/Convair and GD/E friends of my husband, Dick Allen (Dept. 48), for the many kindnesses shown him during his illness and for the beautiful flowers sent at his passing.

Mrs. Richard W. Allen

Deaths

CONVAIR

PETERSON — Gunnard, Dept. 131. Died Aug. 24. Survived by wife, Elsa, two sons, four grandchildren.

Graybill Chosen Club President

D. A. Graybill has been named president of the recently-organized General Dynamics/Electronics/San Diego Management Club.

Other officers include: C. R. McGeehee, first vice president; T. E. Morris, second vice president; L. A. DiVincenzo, treasurer; and George Oatman, secretary.

C. E. Murdock was named to serve as a one-year Board of Control member, while N. J. Barnes and Rex Brouillard were selected to fill two-year board terms.

Installation of the new officers will be at the group's first official meeting set for Oct. 8.

Over 250 persons were on hand at an initial gathering to map out plans for the organization Aug. 1. A special steering committee has handled all affairs for the group during its organizational period.

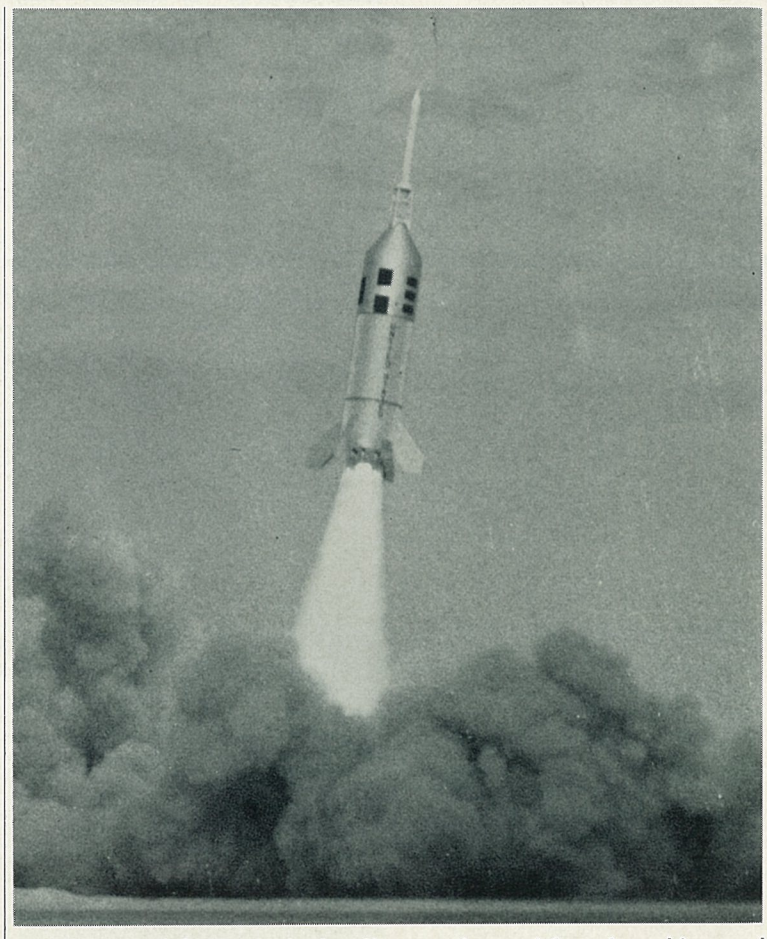
Les Falos served as chairman of the nominating committee.

City Council Approves Naish's Appointment

H. S. Naish, chief of employee services and safety at General Dynamics/Pomona, has been appointed to the Pomona City Merit Commission.

Naish was unanimously approved by the city council for a term ending June 30, 1966.

Naish is also serving on City of Los Angeles police review board and is active in work of Los Angeles Safety Council, National Safety Council, Southern California Recreation Association and National Recreation Association.



OFF AND GONE—Little Joe II roars skyward from launching pad at White Sands Missile Range at start of first test flight.

Little Joe II Launch Successful, Soars to 24,000 ft. as Planned

(Continued from Page 1)

tions joined by an adapter.

Approximately 150, including Gov. Jack Campbell of New Mexico, witnessed the firing, which went off at 9 a.m. precisely as scheduled, following a five-hour countdown.

J. H. Famme, GD/Convair president, headed a considerable delegation from San Diego including W. J. Martin, W. D. Reed, W. R. Bruce, R. R. Hoover and R. K. Gottschall.

In the blockhouse (about 1,200 feet from the pad) taking active part in the countdown were GD/Convair's James Lampman, Jerry Solheid, R. K. Jepperson and J. J. Murphy. Present as observers were J. B. Hurt, Little Joe program manager, H. K. Cheney, deputy manager, J. L. Phipps, D. C. Anderson and R. G. McGeary.

Also from the project office, witnessing the launch, were D. G. Moody, R. E. Malm, N. L. Wener, W. L. Johnston, Warren Hoover, R. M. Bloom, W. W. Huffman, W. M. Addington, K. N. Jones, Owen L. Todd was in charge of assembly and maintenance crews; W. E. Covington directed inspection; J. Boaz was in charge of materials and security.

Convair's Little Joe II launch vehicle simulates the role the Saturn will play in boosting the Apollo spacecraft. NASA has ordered six Little Joe IIs from Convair, plus two launchers. The first four vehicles are fixed-fin, designed to fly high-velocity suborbital trajectories to test conditions of high dynamic pressure within the atmosphere. The other two vehicles will have attitude control systems utilizing movable control surfaces, autopilot, and reaction-control motors. They will be used to test payload abort capabilities beyond the atmosphere.

The first Little Joe II launch was a qualification test to demonstrate the over-all capability of the vehicle for simulations of the Apollo launch phase.

Payload of the initial flight was a dummy Apollo spacecraft consisting of simulated command module and launch escape system.

Weight of the initial test vehicle was about 57,000 pounds and it stood 95 feet above its launcher.

GD/Convair received a contract go-ahead for Little Joe II on May 14, 1962. Manufacturing was complete on the first vehicle on Jan. 15 of this year. The first launcher was completed in March. Activation of the launch site began on April 10 and the first launcher was delivered April 25, followed by the first launch vehicle on July 16.

GUARD SQUADRONS NOW FLY F-102s

Two more Air National Guard squadrons have been transitioned to F-102s recently to make a total of nine ANG units now equipped with the Convair-built jet interceptors.

Latest squadrons to receive F-102s were the 157th FIS at McIntire AFB, Columbia, S.C., and the 151st FIS at McGhee Tyson Air Base, Knoxville, Tenn.

The 151st FIS chalked up over 400 hours of flying time in the F-102s during each of the first two months.

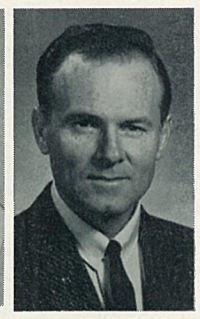
GD/Convair personnel assigned to the base in support of the planes include M. L. C. Williams, field service representative at McGhee Tyson Air Base, and J. A. Myrann, field service rep at McIntire AFB. John K. Underwood is logistics support representative, covering both bases.

Veal and Sharp Get New Titles

Stanley R. Sharp this week succeeded Frank Merritt as manager of industrial security for



Paul Veal



Stan Sharp

GD/Convair, and Paul Veal, manager of wage, salary, labor relations, has assumed responsibilities for labor relations, relinquished by V. L. Summitt.

Summitt and Merritt retired Sept. 1.

Veal, a native Texan, attended Southern Methodist University and served in the Navy from 1934 to 1938, following which he was employed in San Diego by Ryan Aeronautical Co. From 1946 to 1949 he managed Aluminum Products Co. and joined Convair in 1951 in industrial relations. He was named to the wage and salary post in 1957.

Sharp attended secondary schools in San Diego and was graduated from University of California at Berkeley in 1943. He served in the Army 1943-1946 with the rank of captain. After attending Hastings Law School he served a two-year stint in Washington, D. C., as a special FBI agent and joined Convair in 1954 as an industrial security investigator and later as supervisor.

$34,000 a Year Savings Credited To Two CIPs

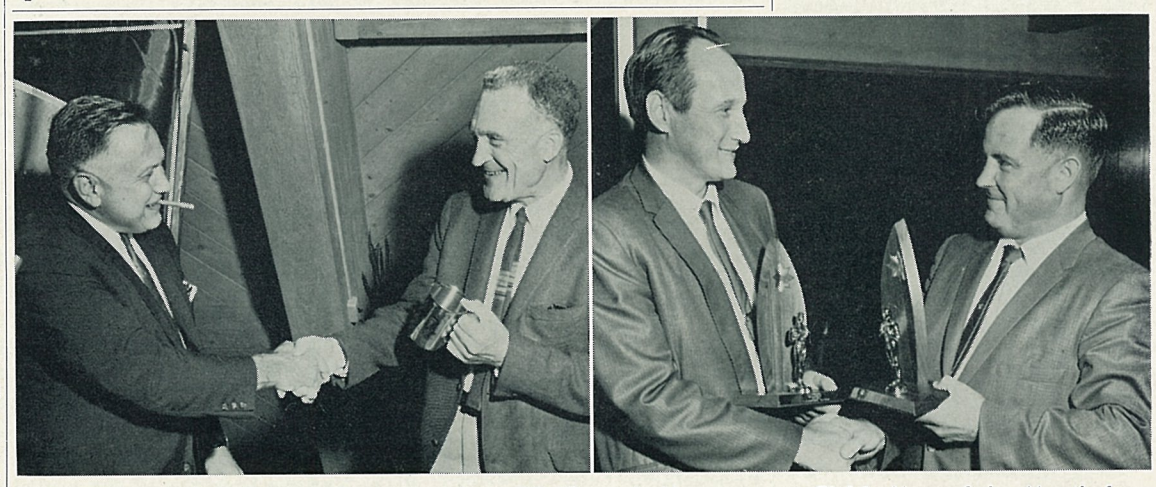
Two GD/Convair men who ferreted out changes in methods to save the division nearly $34,000 a year were tabbed for MacSave-it honors at the Aug. 21 GD/Convair Management Club meeting.

R. L. Ingraham of Dept. 42-1 received the June trophy for his CIP suggesting a consolidation of manufacturing control's tool stores office functions. This move will save 1,764 manhours and $6,286 annually.

Ingraham, now a manufacturing control foreman, started as a riveter helper in metal bench 22 years ago. He has another CIP to his credit to put him near the eligibility mark for the current President's Award race.

K. K. Verseckes, Dept. 93, came up with a new accounting procedure which will bring a saving of $27,399 each year. He was awarded the July MacSave-it trophy.

Verseckes joined GD/Convair as a timekeeper in 1956 and worked up to project analyst in cost analysis section. He is now an analyst on the Little Joe II program. During his seven years with the division he has submitted many ESs and CIPs and now is in the running for the 1963 President's Award.



CHEERS—At left Garner Green receives GD/Convair Management Club's Mug of the Month from Charles Frick, engineering vice president. At right, R. L. Ingraham, Dept. 42-1, and K. K. Verseckes, Dept. 93, congratulate each other on receiving MacSave-it awards for June and July. Ingraham's CIP saved $6,286 and Verseckes' $27,399.

General Dynamics NEWS

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16 to Instruct For Calif. U.

Men from three General Dynamics divisions in San Diego will be on the University of California Extension faculty as the fall term opens the week of Sept. 23.

Of the sixteen GD instructors, eight are from GD/Astronautics; six, General Atomic; and two, GD/Convair.

GD/Astro men and courses they will teach are: Raymond A. Elliott, design specialist, "Introduction to Electronic Digital Computing Systems"; James A. Haskins, staff scientist, "Advanced Engineering Mathematics"; John E. Leib, senior electronics group engineer, "Computer Applications—Ordinary Differential Equations"; W. Duane Montgomery, staff scientist, "Introduction to Complex Analysis"; Cyril H. Nute, design specialist, "Advanced Engineering Mathematics"—and "Statistical Theory of Communication"; Douglas L. Platt, space and weapon system program analyst, "Fundamentals of PERT Planning and Control" and "Advanced PERT"; Theodore Rubin, design specialist, "Probability and Statistics"; Ernest Wade, senior design group engineer, "Introduction to Control Systems Theory."

General Atomic instructors: James H. Alexander, research and development staff member, "Linear Algebra"; John K. Dienes, research and development, "Introduction to Mechanical Vibrations"; Eugene Haddad, research and development, "Nuclear Physics"; Carlo Riparbelli, research and development, "Applied Elasticity"; Marius Troost, research and development, "Logic of Applications of Automatic Digital Computers"; Fred A. Wolf, theoretical physicist, "Magnetohydrodynamics."

GD/Convair faculty members are: J. D. Meacham, publications editor, "Programmed Instruction in Business"; and Bruno F. W. Witte, design specialist, "Numerical Mathematical Analysis."

'VULTEE' CLUB AGAIN WILL HOLD REUNION

General Dynamics employees eligible for membership in the "Vultee Club" have been invited to attend the 16th annual reunion Sept. 28 at Disneyland Hotel, Anaheim.

The "Vultee Club" is composed of former employees of the Vultee Aircraft Co. which later became a division of Consolidated Vultee Aircraft Corp. Currently, there are 800 active members who pay no dues or fees, but merely get together once each year.

Dinner reservations are $5. Those eligible and not on the regular mailing list may write to: Vultee Club, 11010 So. Garfield Pl., South Gate, Calif.

San Diego members are considering chartering a bus to make the round trip, if interest warrants. Wes Magnuson (Astronautics) will supply details to those calling ext. 1925 at GD/Convair's Plant 1.



MAIL ORDER DEPT. — Edna Hovey (GD/Convair Dept. 48) checks over order for GD/Convair value control programmed instruction books as she packages sets for shipment. Edna doubles as secretary for W. J. Martin, director of reliability, and H. P. Williams, manager of value control.

Value Control

Word Gets Around, GD/Convair 'Trainers' Sell Like Hot Cakes

It pays to advertise—but some things are so good they sell without advertising, as shown by advance sales of General Dynamics/Convair's programmed instruction for value control.

To date over 400 sets of the training books have been bought and paid for by various branches of the military and industrial companies, well before any kind of a promotional campaign, said H. P. Williams, GD/Convair manager of value control.

"We actually didn't expect sales to get under way until this fall when most companies begin their training programs," he explained. "So we have been really amazed at the numerous requests and hundreds of inquiries that have poured in, before the word has had a chance to circulate to any extent at all.

"We expect interest to snowball as training is stepped up and present users prove the worth of the new method of teaching value analysis. It will be particularly pertinent for defense industries seeking the most efficient means of complying with value engineering requirements of the Department of Defense's Armed Services Procurement Regulations."

Since the first order was received in late February, sets have been in demand by every type of industry, from aerospace to sewing machine manufacturers. One set has gone to a British firm, another to a company in the Far East, and three to Canadian businesses. So far, the largest order was for 50 sets, although several inquiries have been received which may lead to orders of 100 to 500.

At least six companies already have set up their own training programs based on the GD/Convair step-by-step method of instruction, and one university is using the series.

Sampling of comments fed back to GD/Convair shows nothing but praise: "The texts are nicely arranged and extremely understandable. Much of the material will be usable in our planning for our training program" . . . "Congratulations on an excellent piece of work" . . . "Compliments on a novel and systematic approach to the training task" . . . "Teams require less direction and guidance from project leaders."

The value control programmed instruction, compiled through cooperative efforts of GD/Convair technical publications, educational service, and value control functions, cuts seminar time by at least one-fourth, points out Williams.

He went on to say that the programmed instruction form of training has shortened the standard 40-hour seminars in the division's continuing program by 10 hours.

"Ten hours, multiplied by 30 or 40 men, saves the division hundreds of manhours every month!" he said. "And, we've proved that the simplified instruction gives each person a thorough understanding of value control techniques and their importance."

Some 600 GD/Convair men have gone through value control training in 17 full-length seminars since value vs. cost training was started in the division a couple of years ago. Over 200 administrators on the executive level have received indoctrination in capsule courses.

Besides the regular seminar program which will resume within a few weeks on a monthly basis, plans are in the making for several special seminars for outside companies in the San Diego area.

Small industries in the nearby vicinity will be surveyed to find out how many would like to send their people to full-length seminars offered by GD/Convair. Each company's own projects would be used in the workshop section.

In addition, a symposium is in the offing for military services and suppliers. At this time a complete review will be made of the latest ASPR value engineering requirements.

Role of Decision

GD/Astro Scientist Faces Task Of Integrating Man, Machines

Lawrence J. Fogel might be dubbed a "scientist-engineer" by reference to definitions in his book published earlier this year by Prentice-Hall.

In "Biotechnology: Concepts and Applications," Fogel—a senior staff scientist at General Dynamics/Astronautics — comments that the scientist "does to know," while the engineer "knows to do."

The 800-page volume (written on his own time over a three-year period), deals with the problems of integrating man and machines to meet the challenges of present and future tasks.

To gain the necessary information, Fogel has drawn upon the classical disciplines of psychology, biology and mathematics to examine problems associated with design of pressure suits, cockpit displays and other equipment used directly by man.

"It is man's decision-making capability which justifies his inclusion in complex systems," he notes, taking a broader view. "Therefore, modern computers should be used wherever possible to enhance this key human ability."

At 35, Fogel holds engineering degrees from New York University (BSEE, 1948) and Rutgers University (MS, 1952).

He has also completed all course requirements for a doctorate in electrical engineering at Polytechnic Institute of Brooklyn, and in biotechnology at University of California, Los Angeles. Preparation of a thesis should complete the degree requirements in the near future.

At GD/Astro, the "author-scholar-scientist-engineer" is presently conducting a research program in the area of artificial intelligence: the use of machines to solve problems which have not yet been solved by man.

"The often quoted belief that computers do nothing but what you tell them to do is a dangerous over-simplification," Fogel commented.

Using GD/Astro's IBM 7090 system, he is attempting, in particular, to allow the computer to carry out a fast-time replication of natural evolution so that the machine iself will evolve better and better programs to meet the imposed "problem."

Fogel feels a definite urgency in his work.

"The dangers which might result from the misuse of technology are great," he said. "So great, in fact, that we must use this technology to increase our intellectual capacity if we are to hope for a safe and worthwhile future."

While unique, Fogel's research and the varied background from which he approaches it are typical of research and researchers in the full spectrum of science, to be found at General Dynamics divisions across the continent.

Fogel joined the Dynamics family at GD/Convair in 1956 as a design specialist, and later headed a reliability group before taking a year's leave to serve as special assistant to the associate director (research), National Science Foundation, in 1960.

Returning to the West Coast in 1961, he joined GD/Astro where he reports to Dr. H. F. Dunholter, director of research and advanced technology.

In addition to his recent book on biotechnology (which is designed as a college text and reference work), he is author of more than 30 scientific and technical papers.



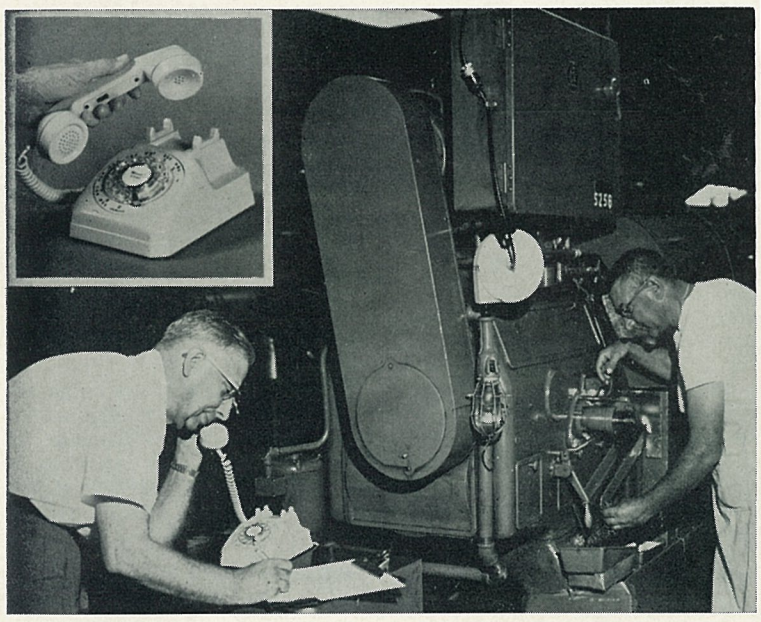
EPIC OCCASION—Delivery of publisher's leather-bound office copy of his book is moment dear to heart of every author. Beaming Lawrence Fogel, GD/Astro senior staff scientist, right, is no exception as he accepts volume from Prentice-Hall representative John Crane, left.

New Stromberg-Carlson Phone Lets Listener Adjust Volume

A telephone handset with built-in volume control has been introduced by Stromberg-Carlson — division of General Dynamics at Rochester as an addition to its line of communication products. It will provide improved telephone service for the hard-of-hearing and for persons whose phones are located in noisy areas.

The new HRA-1000 receiver-amplifier places complete volume control at the fingertip of the subscriber, making it possible for him to vary the incoming voice volume simply by turning a knob on the telephone handset.

The entire lightweight unit is contained in the handset, making installation simple for the telephone operating company. No separate unit needs to be installed, only the special handset which is available in white, beige, ivory and black to fit all 1400, 1500, 1600 and 1700 series telephones. The HRA-1000 receiver amplifier handset requires such a small amount of power that the demand is easily met by the central office battery or local battery.



CONTROL — Al Parina, foreman of Stromberg-Carlson's screw machine department, demonstrates use of new HRA-1000 receiver amplifier (insert) before he retired in August. At right operating machine is Joseph Guarino.

San Diego Junior College Courses To Be Offered In-Plant This Fall

In-plant training courses offered by GD/Convair educational services in cooperation with San Diego Junior Colleges have been announced for the fall semester.

Classes will be taught following regular work hours (most 4:30 to 7:30 p.m.) at Bldg. 14, Plant 1, with the majority taught by qualified General Dynamics instructors. Classes begin the third week of September and run through late January. Some courses require prior attendance in other courses. Wayne Turner, ext. 491, will answer specific questions.

Basic cost per semester is $1.50 and students must buy their own text books.

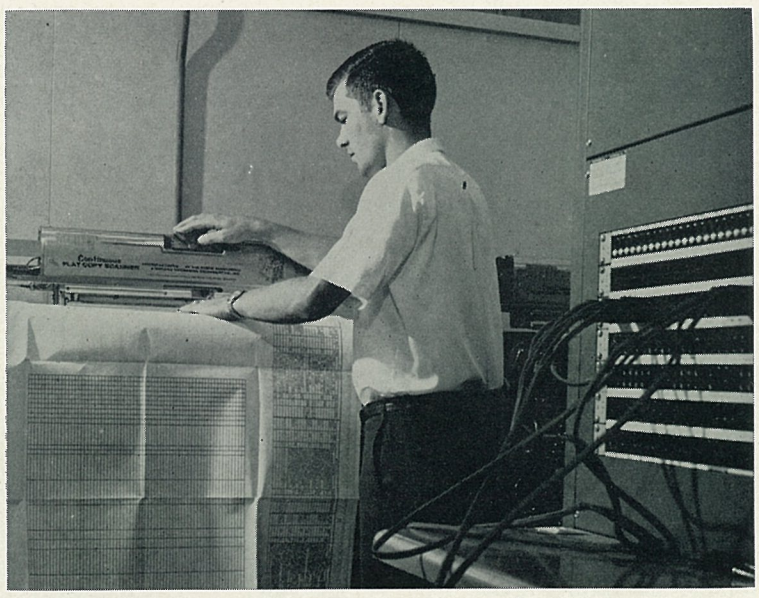
Here is a complete rundown on scheduled courses with the class date in parenthesis, plus the name of the instructor:

Basic Hydraulics (Wednesday), Walter Gill; Basic Technical Writing (Tuesday), Louie Henderson; Technical Writing II (Wednesday), Henderson; Technical Writing III (Thursday), Henderson; English for Technical Writers (Monday), Bill Stewart; Technical Writing 7 (Thursday), L. C. Litchfield; Basic Electricity (Monday), Ken Theilig; Basic Electronics (Monday and Wednesday), E. B. Milner; and Electronics Components and Theory (Tuesday and Thursday), Harold Ayer.

Electro Dynamic 'Buspool' Formed

A group of employees at Electro Dynamic division, Avenel, N. J., have solved transportation problems with a "buspool."

They have chartered a bus for a daily run from Bayonne. One big advantage is that there is no doubt about whose turn it is to drive.



DATA FAX—GD/Astro expects to save $355,000 during updating of series "F" Atlas bases through recently-implemented communications control system. Among key savings will be those realized in rapid data transmission facsimile equipment such as this operated by Mike Dicklich of technical publications.

New Communication System Will Speed GD/Astro Updating

General Dynamics/Astronautics is implementing a new communications control system to serve teams updating series "F" Atlas bases (**General Dynamics NEWS**, July 10, 1963).

Basic steps have been taken with others to follow as requirements dictate.

Through the system, Astronautics will realize savings in excess of $25,000 monthly or more than $355,000 for the entire program!

Astro personnel have worked closely with representatives of both American and Pacific Telephone and Telegraph Companies in mapping out details. The system affords maximum use of voice, wire and facsimile transmission at the lowest possible cost. At the same time Astro will be able to exercise complete control over the entire communications network and its resulting costs through the office services section of division systems department.

Six series "F" bases are widely scattered and each is served by a separate telephone company. In past activation and updating work these companies presented bills to each base which, in turn, forwarded them to Plant 71 accounting. Accounting, however, had to route the bills through office services for verification. The results were many handlings per bill.

Now all companies will submit bills directly to Pacific Telephone in San Diego. Astro will receive a single monthly bill, sent directly to office services for verification, then to accounting for payment.

Astro will also utilize a Bell System service, called TELPAK, which offers a group of lines on a point-to-point basis at greatly reduced rates. Next month the service links Astro with Altus AFB, Okla., through Walker AFB, N.M. From this terminal, voice and Data Fax lines will stretch to Dyess AFB, Texas, Lincoln AFB., Neb., and Plattsburgh AFB, N. Y.

Astro will also have available through TELPAK direct or "hot lines" for voice communications at all but Plattsburgh AFB. The latter will be included in General Dynamics' Wide Area Telephone Service which provides unlimited calling to a specific area on a flat-fee basis.

Largest saving in the entire system will be realized through a new Data Fax service. This service will afford a two-way transmission of facsimile material over a single circuit in lieu of two one-way circuits formerly used.

This unusual service allows sending and receiving of facsimile material such as drawings, blueprints, diagrams, etc.

During peak periods of former base activation work as many as 400 pages of material per day were transmitted on two eight-hour shifts. Special scanners "read" material at a rate of 1⅓-inches per minute, transmitting this material simultaneously to the bases. Up to 18-inch-wide material of any length may be handled.

Data Fax equipment utilized by Astro is located in Bldg. 51 at GD/Convair where Astro's technical publications function is centered. It includes an operating or switching console to route outgoing and incoming facsimile material. Any number of points may be cut into the system to send or receive at the same time.

Pt. Loma Operations Now Under Rother

All operations at GD/Astronautics' Point Loma Test Site have been concentrated under Carl Rother, engineering site manager, Dept. 566-1, in a move announced earlier this month by President J. R. Dempsey.

This centralized responsibility is expected to result in more effective management, with increased efficiency, reduced costs, and improved test operations.

Rother is now responsible for all activities at Point Loma. All employees assigned there, regardless of department, are under his direction, although personnel continue to report to their home departments for administrative purposes.

ARA Ballroom Dancing To Organize Sept. 16

Scope of ARA's fall ballroom dancing program will be determined at an open organizational meeting to be held at 7:30 p.m., Sept. 16 in ARA Clubhouse, Commissioner Ludy Moeller has announced.

The program will consist of 12 one and one-half hour lessons for a total cost of $9 per person.

Moeller said more than one class may be possible if interest warrants. Class operation requires a minimum of 17 couples.

Knutson Wins Two Pistol Competitions

J. S. Knutson doubled by taking both Police and National events in ARA Pistol Club's Aug. 25 shoot.

Knutson bettered Harry Black in master class, while Bill Dittman beat Warren Rauscht and Byron Clapper topped Bill Worthington in expert and sharpshooter classes respectively.

Rauscht trailed Knutson in the national event.

NAVY BENEFIT EARNS PRAISE

Nellie Keller, GD/Astro overhead crane operator, was recently lauded by leaders of a North Island Benefit Carnival for her help in promoting the event. Nellie helped sell 100 books of donation receipts among fellow employees.

Gardeners to Hear Dahlia Developer

ARA-CRA gardeners will gather tonight (Sept. 4) at 7:30 p.m. in ARA Clubhouse (adjacent to GD/Astro main plant) to focus attention on dahlias. All GD/Astro, GD/Convair and GD/E folk are welcome.

Guest speaker will be Paul Comstock of Comstock Dahlia Gardens, who, over a quarter-century in business, has introduced at least one new dahlia variety each year.

He will show slides and movies reviewing dahlia development during the past decade, and will bring sample blossoms of varieties he has introduced.

Of special interest will be samples of dahlias placed on the market for the first time this year, and previews of varieties to be released in 1964.

$10 Deposit Will Hold Vegas Reservations

Space is still available for GD/Astro employees wishing to participate in ARA's Las Vegas trip Sept. 20-22. A $10 deposit will hold reservations at employee services, Bldg. 8.

Deadline for sign-ups is Sept. 13, at which time balance of the $25 per person cost must be paid.

The package deal offers double-room accommodations at the new Tally-Ho Hotel in the heart of Las Vegas' "strip" and round trip transportation via chartered bus. Single rooms are available for an additional $2 per night.

Few Openings Left For Riding Lessons

Some openings remain in beginning, intermediate and advanced horseback riding classes to be sponsored by ARA Riding Club beginning Sept. 8.

Employees or members of their families may register for the 8-week series by completing applications available at employee services outlets.

Lessons will be given from 11 a.m. to noon Sundays at Bonita Valley Farms. Cost is $15.

ARA Riders to Host Show in Club Arena

ARA Riding Club plays host to the Mission Trails Riding Club at a horse show set for the ARA arena Sunday, Sept. 8.

Junior riders will gather at 2:30 p.m., Saturday, Sept. 7, and the next regular ARA Riding Club meeting will be held at 7:30 p.m., Sept. 10, both at ARA Clubhouse.

ARA Drama Group Names New Officers

Annabel Audet heads new officers recently assuming posts with Astro Players, ARA drama club, while John Cone has moved into the vice president's slot.

New committee chairmen are Pauline Middleton and Pat Givens, who have accepted responsibility for membership and promotion, respectively.

The group meets the second Wednesday of each month in ARA Clubhouse, and is presently conducting an intensive campaign for new members. All GD/Astro employees and dependents have been invited to join the club.

Claire Ward Earns 'Miss College Prep'

Claire Ward, 18, daughter of GD/Astro's Lorraine Ward, Dept. 313, is this year's representative of Kearny High School graduating class as candidate for the "Miss College Prep" title.

WIVES TO LUNCH IN MISSION VALLEY

Astro Wives' Club will hold its monthly luncheon meeting Sept. 18 at Mission Valley's Town and Country Hotel, with social hour beginning at 11:30 a.m. and luncheon at 12:30. Reservations are being accepted by Helen Johnston, 277-2308.



AT BIG BEAR—Rustic Wawona Lodge, headquarters for General Dynamics folk participating in joint ARA-CRA Ice Skating Club-sponsored weekend at Big Bear Lake, Sept. 20-22, has all modern conveniences including pool. Accommodations include rooms for two to five persons, housekeeping cabins for families.

Weekend Outing to Big Bear Lake In Prospect For Dynamics Folk

General Dynamics folk — Convair, Astro or GD/E — have been invited to join in a weekend outing at Big Bear Lake, Sept. 20, 21, 22, sponsored by the joint ARA-CRA Ice Skating Club.

For $12 per person, participants get a package of two nights' lodging and all meals. Children under 8 years participate for only $6.

Site of the outing is Big Bear's Wawona Lodge, long-time favorite of General Dynamics weekenders. Accommodations include hotel rooms with private bath for two, three, four or five persons, and housekeeping cabins for family groups.

Activities feature swimming in the lodge pool, hiking, horseback riding, cycling, ice skating, and an informal dance (with midnight pizza snack) Saturday evening. Meals are under direction of Gil Hutter, Prophet Co. manager at GD/Astro.

Reservations (limited to 100 persons) may be made at employee services at Plant 1, 71, 19, with full price payable at time of sign-up. Individual transportation arrangements must be made.

Barbara Gilliland, Astro Blades president, GD/Astro ext. 4041, can supply additional information.

Ground School Course Slated

There are still openings in the proposed CRA's Solo Flyers ground school course scheduled to begin this month. All General Dynamics would-be pilots in the San Diego area are eligible to enroll.

"Considerable interest has been shown and an instructor has been engaged, but we need a few more registrations before a definite starting date can be announced," Harold Ayer, Solo Club president said.

The course will cover such subjects as physical requirements, student permits, pre-flight checks, traffic patterns, theory of flight, navigation and meteorology, all of which are necessary before a student can earn his wings.

Flying lessons at special rates are offered to members of Solo Flyers through Jim's Air Service, Lindbergh Field.

Additional information concerning the class may be obtained from Ayer at ext. 2678, Convair Plant 1.

Holidays Set For Year-End

Forthcoming holidays for General Dynamics employees in California—based divisions have been announced so that families may have ample time to plan their activities.

Thanksgiving Day, Nov. 28, will be a regular holiday.

The year-end holidays will be divided between three days off at Christmas and one on New Year's Day. Monday, Dec. 23, Tuesday, Dec. 24, and Wednesday, Dec. 25, will be holidays. So will Wednesday, Jan. 1.

Employees in departments performing necessary maintenance and industrial security work during holiday periods will be notified individually.

Jack Rogers Wins Honors In Trapshoot

The heat was sizzling but so was Jack Rogers, GD/Convair, as he walked away with top honors in three events in the ATA registered trapshoot Sunday, Aug. 18 at CRA-ARA's Gun Club range at Gillespie Field.

The event drew a field of 91 enthusiastic shooters from the Southern California area, making it one of the largest and most successful meets of the season, CRA Commissioner Jack Swank reports.

Standings for the event were: Class A and B combined: Rogers with 98 out of a possible 100; Bill Shrode, second with 97; and Howard Jacklin, GD/E, and Tom Hodgson tied for third with 96. Class C and D combined: L. P. Johnson, first, 96; John Beamer, GD/Astro, 94; Joe Ellis, 93. Handicap: Rogers, 97; Bill Miller, 95; Jacklin, 94. Combined 16-yards and Handicap: Rogers, 195 out of a possible 200, followed closely by Warner Gatterman, GD/Astro, with 190. Gatterman with a score of 90 also placed first in the Doubles event.

Lois Smith emerged with honors as high lady of the day with an 87, while Jeff Johnson at 86 was high junior.

Shooting sweaters went to first-place winners, and gloves or glasses were awarded to runners-up.

Extension Offers Programming Class

A course in "Programmed Instruction in Business" is being offered General Dynamics people in the San Diego area by University of California Extension. First class will be held Sept. 26 at Roosevelt Jr. High School, continuing each Thursday from 7 to 10 p.m. J. D. Meacham, GD/Convair, will instruct.

Registrations are now being accepted at Extension headquarters, 1221 Fourth Ave. Meacham is available at Convair ext. 2249 to answer inquiries concerning the class.

September Salvage Schedule Set Forth

Schedule for the next four Saturdays at GD/Convair and GD/Astro salvage yards is:

GD/Astro—Sept. 7, 21.

GD/Convair—Sept. 14, 28.



FAMILIAR FACES — Retiring from GD/Convair last week were these widely known and respected men. From left, V. L. Summitt, Frank Merritt and Cedric Durst.

Merritt, Summitt, Durst, 'Old Convair' Men, Retire

Three veteran "old Convair" men retired last week.

They are V. L. Summitt, long time labor relations head for GD/Convair division; Frank Merritt, for many years in charge of division industrial security; and Cedric Durst, guard captain and one-time chief of guards.

For all three, "these were the happiest years . . ."

Both Merritt and Summitt joined Convair in the summer of 1942, the former as head of plant protection for the war-booming division. Merritt left the San Diego police force as a captain to take the new position. In 1951 he also took responsibility for civil defense and fire department as well as the guard force, with the title of manager of industrial security. He has been widely known in law enforcement circles for more than 40 years.

Summitt, after a successful business career in the mid-west came to San Diego and to the attention of the late Walter Burr who was then organizing Convair's industrial relations department. Summitt was placed in labor relations section and during the last two decades his work made him probably the best known single individual in the San Diego plants—and the most generally liked. Everyone knew "V.L." (though not everyone knew his first name of Vane).

Durst is the "junior" of the trio because of broken service, but is a close second to Summitt when it comes to a host of in-plant friends. He came to Convair during the war years after a career in baseball (he played for the Yankees and managed the San Diego Padres 1933 to 1942) and baseball beckoned him back periodically in the post-war era to manage different ball clubs, including the Cardinals. However, since 1950 he has logged continuous service in the guard force.

As for the future, Summitt expects to take it easy—but not too easy, because he'll probably sell some real estate to keep him active; Merritt has checked over his fishing gear and golf sticks and may take a trip to Hawaii; Durst is undecided, but confident that he will remain active, possibly in baseball on a part time basis.

Two Shooters Divide CRA Pistol Honors

Jim Halfacre and Joe Williamson did a bit of "switcheroo" for top spots during CRA Pistol Club matches Aug. 25 at the San Diego Police Pistol Range.

Halfacre shot a 289 to win the Police event, while Williamson fired a 286 to deadlock for second with Warren Walker. Ralph Picard trailed with 275.

Williamson came back to take the Short National event with a 259 score, just one point better than Halfacre. Picard finished third with a 254 and Walker posted a 222.

Next scheduled shoot will be at 9:15 a.m. Sunday (Sept. 8) at the Police Range.

Material Winner In 'Slow Pitch' Play

GD/E Material's "slow pitch" softball team won the area championship last month, defeating GD/E Purchasing 14 to 3 in the deciding game of a best two out of three series.

Material previously has won the National League while Purchasing was taking the American League pennant.

MORROW ELECTED TO ARMY BOARD

W. J. Morrow, General Dynamics/Pomona's director of Army weapon systems management, was recently elected to board of directors of Los Angeles Chapter of Association of the U. S. Army.

Charm Class Open To GD/E, GD/Convair Wives, Daughters

GD/Convair and GD/Electronics wives and daughters interested in a special San Diego Industrial Recreation Association-sponsored charm course may still obtain registration forms through CRA office.

Two basic classes begin Thursday, Sept. 19, and Wednesday, Sept. 25. An advanced class starts Wednesday, Nov. 6. Completion of a basic course is required for those signing up for the advanced course.

Both types of courses meet for two hours (7 to 9 p.m.) once each week in the House of Hospitality, Balboa Park, over a six-week period.

Special rate for the basic course is $13.50, while the cost of the advanced is $19.50.

Those taking part will learn a model's secrets of good grooming, figure control, visual poise, makeup, hair styling, etiquette, speech, and wardrobe wisdom.

Registration forms, plus checks or money order, are to be forwarded directly to Edith Antelline, conductor of this and similar courses in the past for CRA. Registration forms are to be mailed to: Miss Edith Antelline, 336 Eighth St., Del Mar, Calif.

Rockhounds Return To Wed. Schedule

CRA Rockhounds will go back on their regular schedule of meetings and instruction sessions as they reopen their lapidary headquarters at Gillespie Field next week (Sept. 11).

Classes will be held every Wednesday evening, starting then, in the remodeled workshop in Gillespie Field's quonset building, said Dan Whorton, CRA commissioner.

Anyone interested in learning the fine art of cutting and polishing their rock finds may get expert advice between 7 and 9 p.m.

First fall meeting of the Rockhound Club will be held next week (Sept. 12) in Gillespie Field Clubhouse. No outings are planned for this month, although one will probably be set over some weekend in October, said Whorton.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

ARCHERY — Regular club shoot Sunday (Sept. 8), Balboa Park Field Range.

BOWLING—Registration open for winter leagues. Call Jim Hayman, home phone, 466-1262, or Mike Brooks, home phone, 469-8793.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. All General Dynamics people welcome.

CAMERA CLUB — CRA and ARA joint meeting 7:30 p.m., Sept. 15, Photo Arts Bldg., Balboa Park. Lecture.

COIN CLUB — Meeting Sept. 19, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FISHING CLUB — Meeting Tuesday (Sept. 17) at Gillespie Field Clubhouse. Potluck at 6:30 p.m., meeting at 7:30.

GARDEN CLUB—Joint CRA-ARA meeting tonight (Sept. 4), 7:30 p.m., ARA Clubhouse.

ICE SKATING — Big Bear weekend, Sept. 20-22. Reservations, $12 each, accepted through Sept. 13 at GD/Convair employee services.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children, 25c.

PISTOL CLUB—Regular shoot Sunday (Sept. 8), 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Sept. 5), 8 p.m., Habor Drive headquarters.

RIDING CLUB — Potluck dinner and dance Sept. 14, 6 p.m. to midnight, Gillespie Field Clubhouse. No business meeting Sept. 5.

ROCKHOUNDS — Rockhound Shack at Gillespie Field reopens on (Sept. 11) for lapidary instruction. Meeting Sept. 12, 7:30 p.m., Gillespie Field Clubhouse.

ROLLER SKATING — General Dynamics skate night Sept. 16, Skateland, Front and G Sts. Free tickets at GD/Convair employee services.

SOLO FLYERS — Call Harold Ayer, ext. 2678, Plant 1, to sign for ground school course.

STAMP CLUB—First meeting of fall season Sept. 5, 7:30 p.m., Convair executive dining room.

TENNIS — Entries close Sept. 23 for IRC tennis tourney Sept. 28-29, Oct. 5-6, Morley Field.

WATER SKI CLUB—Weekend skiing on phone call basis. Call Jack Loos, ext. 1437, Plant 1.



CRA GETS "JENNY" — Jack Brock, CRA's outside maintenance and construction superintendent, puts Jungle Jenny, GD/Convair designed track vehicle, to work hauling heavy trash cans at Pecan Park.

Willing Worker

'Jungle Jenny' Tracked Truck Goes to Work at CRA Parks

Convair Recreation Association has fallen heir to a unique vehicle developed at GD/Convair during exploration into a new field.

Jungle Jenny, as the strange looking truck on tracks was known around the plant, keeps its name as it goes into service in CRA off-site parks.

The lightweight cargo tractor, designed especially for rough terrain, will come in handy as a utility truck at the recreation association's Pecan Park and mountainous Pine Crest resort, said J. K. Field, manager of personnel services.

Jack Brock, CRA's maintenance and construction superintendent at the off-site locations, is getting acquainted with the new and different vehicle and says he probably will equip it with a driver's seat so that he can ride while doing hauling chores.

Now, the operator walks along behind, controlling it from the rear. Two handles operate cables running to the tracks for combined throttle and brake control.

The lightweight truck, weighing only 700 pounds, can carry a load up to 1,000 pounds. The bed is 5 feet in length and 3½ feet wide.

It is powered by two 6½ hp engines using a gear reduction of 60 to 1 and has the same torque at the tracks as a large automotive V-8. It was especially designed for rugged country and inaccessible territory. Its strength was demonstrated during tests when it climbed a grade twice as steep as the Laurel St. grade—idling.

Five-Night-Per-Week Schedule Set For Winter Loop Bowlers

Keglers from GD/Convair and GD/Electronics will begin rolling on a five-night-per-week schedule shortly as the long winter season gets under way in CRA-sponsored leagues.

Co-commissioners Jim Hayman and Mike Brooks have lined up a variety of leagues to roll at a number of bowling establishments around San Diego.

Only one league begins action this week. That is a 740-760 Mixed Handicap loop at Frontier Lanes. Action begins there tomorrow (Sept. 5). However, there are still openings, if interested teams or individuals will contact Hayman at ext. 1241, Plant 71.

All other leagues swing into play on assigned nights next week. Again, entries are possible in all leagues by contacting the individual noted.

The following leagues are scheduled:

Tuesday — 700-750 Mixed Handicap, University Lanes, Call H. Skilton, ext. 2461, Plant 1.

Wednesday—700-750 Mixed Handicap, Pacific Recreation. Call Hayman, ext. 1241, Plant 71.

Wednesday—La Mesa Classic for bowlers of 175 and over, La Mesa Bowl. Call Mike Brooks, ext. 410, Plant 2.

Thursday—Mixed Foursome, Victory Lanes. Call F. Colianna, ext. 1126, Plant 1.

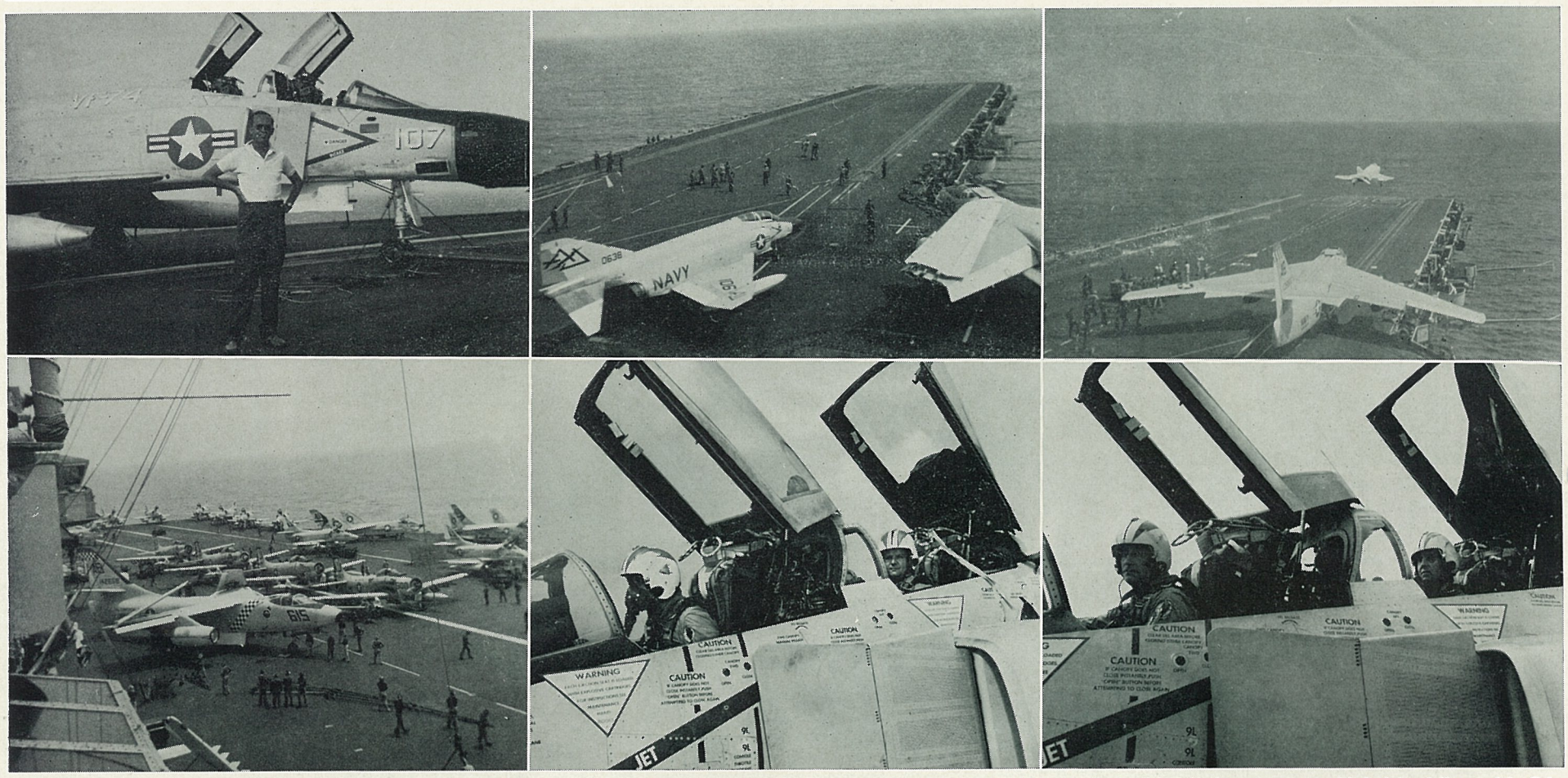
Friday—850 Scratch or 510 Trio, Pacific Recreation. Call Brooks, ext. 410, Plant 2.

Friday—Women's Trio Handicap, Pacific Recreation. Call Brooks.

All leagues roll at 6:30 except the La Mesa Classic at 9 p.m.



OFF TO MEXICO—Score from Dynamics divisions in San Diego returned this week after two weeks touring Mexico by train. They are shown leaving San Diego Aug. 16 for drive to Mexicali where they left autos and boarded train. Tour leader was Jim Hardison of GD/Convair service parts, left above.



AT SEA—Bill Allen and Lee Pinkel of GD/Fort Worth engineering served a week's tour of duty aboard USS Forrestal to gather design-input information for F-111. Allen is shown at top left beside F4B Phantom II and at lower right ready for takeoff with LCdr. Aldo J. DaRodda. In lower center Pinkel is riding with Cdr. G. W. Ellis. At upper right F4B clears deck as A3D awaits "go" signal on catapult. Lower left shows deck storage.

Retired Air Marshal to Direct Canadair Ltd. Sales in Europe

Appointment of Air Vice-Marshal (ret.) I. C. Cornblat as a vice president of Canadair in charge of European Operations was announced recently. Cornblat, whose offices will be in London, England, was, until his recent retirement, Comptroller of the Royal Canadian Air Force and a Member of the Air Council.

J. Geoffrey Notman, president of Canadair, explained that the problems facing Canadian firms in trying to get business in international aerospace markets were becoming increasingly serious. "We at Canadair," he said, "have had a long and successful history of selling our aircraft products in the export field, but in the face of current conditions we feel we must do even more."

In his new position, Cornblat will coordinate and supervise all Canadair interests and activities in Europe.

Canadair is seeking to broaden its business opportunities to participate in a wider range of technical development agreements and production-sharing activities.

Field Men Pass Intensive Training In Servicing GD/E Equipment

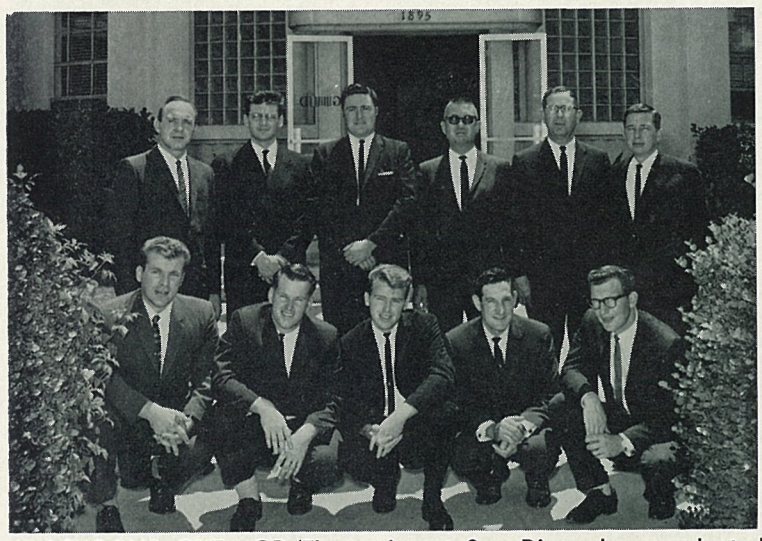
GD/Electronics at San Diego last month graduated six more computer experts to fill field assignments servicing GD/E's growing numbers of microfilm recorder customers.

The course of instruction, conducted at GD/E's Hancock Street facility, involved intensive technical training in operating and servicing the S-C 4020, the S-C 3070, the S-C 1090 and the F50/53. Graduates demonstrated intimate knowledge of digital computers, photographic and cathode ray display principles and mastery of trouble-shooting and fault correction techniques.

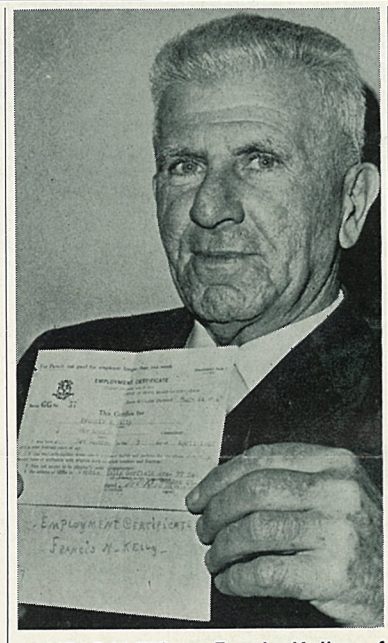
"This particular class was one of our best," W. R. Walter, training group supervisor, commented. "Destined to be our representatives in the field, they are in extremely important positions in dealing directly with our customers and must possess talents in diplomacy as well as technical matters."

A member of this class was Bernard Hauseux, who will be assigned to the Paris, France area. A senior engineer and graduate of the Ecole Superieure d' Electricité, France's highest electronics school, he is a specialist in American-made electronic machine maintenance. He will service the S-C 4020 leased by the Commissariat a L'Energie Atomique in Paris, as well as the S-C 4020 unit leased by the United Kingdom Atomic Energy Authority.

GD/E-San Diego has more than a score of trained field representatives currently on assignment to customers coast to coast.



SCHOOL'S OUT—GD/Electronics at San Diego has graduated a new class of experts to serve in field assignments. Crouched are, from left, Donald C. Pacheco, Thomas S. Harris, Timothy Devlin, August G. Dale, Carl W. Gretzinger, students. Standing, from left, are W. R. Walter, training supervisor; Bernard M. Hauseux, student; J. J. Konen, S-C 4020 training; C. R. McGehee, product support manager; C. I. Smith, S-C 1090 training; Ron McClure, S-C 3070 training.



HE RANKS — Frank Kelly of Electric Boat holds employment certificate that permitted him to go to work 46 years ago when he was 14.

EB's Kelly, With 46 Years, Claims He's Most Senior

With the recent retirement of Louis Drissell of Electro Dynamic division after 48 years of service, it now appears that Frank Kelly can claim the title of General Dynamics' most senior citizen.

Kelly, shipyard administrative manager at Electric Boat division, Groton, Conn., has been with the company 46 years. He started to work in 1917 when he was 14 years old!

Kelly recalls that before he could qualify for his office boy job he had to demonstrate that he "could read with facility, write simple sentences legibly and perform the operations of fundamental arithmetic." For a salary of $4 he put in a six-day, 63-hour week.

Kelly has been with Electric Boat continuously ever since, and some of the times were tough. In the 20s employment shrank at one time to 66 (it is 17,000 today). And there were times when the company executives took bank loans to keep the company going. Kelly himself once mortgaged his home to meet a $3,000 payroll.

With a flair for figures, Kelly gravitated into the financial side of the division.

Although the 63-hour week diminished over the years, it returned for Kelly with a vengeance during World War II.

"I worked seven days a week during the war. I didn't have one day off for three solid years."

General Dynamics Men Take Lead in SAE Meet

A number of General Dynamics men from West Coast divisions will have an active part as chairmen and lecturers at the National Aeronautic and Space Engineering and Manufacturing conference sponsored by the Society of Automotive Engineers in Los Angeles Sept. 23-27.

M. D. Weisinger, chief of manufacturing research and development at GD/Convair, represented division president, J. H. Famme, on the executive planning committee and as an organizer for the forum on high temperature structures—materials, engineering design criteria and related manufacturing processes.

Dr. W. H. Steurer, GD/Convair development project engineer, will chair the forum with C. A. Ives, GD/Convair senior plant engineer, co-chairman and secretary.

Weisinger also has been requested to give a talk on "Laser Welding" at the Metal to Metal Aerospace Joining forum Monday. He will describe GD/Convair's research in the field.

R. W. Casebolt, also of GD/Convair, will discuss "Developments of a High Temperature (1,500 degree F.) Pneumatic Power System for Flight Vehicles" at the Wednesday session on auxiliary power systems for future aircraft.

V. G. Mellquist, GD/Astronautics chief of applied manufacturing research, is organizer of the Tuesday manufacturing forum on determining training needs. Chairman is R. A. Evans, GD/Astro manager of personnel administration, and J. A. Croft, chief of educational services at GD/Astro, co-chairman and secretary.

David Krause, GD/Astro chief of reliability and maintenance, is chairman and organizer of the session on reliability of systems at which J. R. Burnett and Takeharu Taniguchi, both of GD/Astro, will present a paper.

R. W. Gerber, GD/Astro design specialist, is chairman and organizer of the Thursday cryogenics meeting. At that time J. J. Gilbeau, also of GD/Astro, will talk on "Ground Handling Systems for Liquid Hydrogen."

Other GD/Astro men giving papers will be E. R. Foor, welding technology center supervisor; J. M. Garrison, senior design engineer; C. E. Edenfield, senior structures engineer; J. K. Lowry, structures engineer; K. M. King, design specialist; F. J. Nordby, reliability engineer.

G. E. Sylvester, GD/Pomona vice president of operations, is organizer of the Tuesday forum on material review board problems.

H. H. Hart, GD/Pomona factory manager, is chairman of the discussion of current problems and possible solutions with respect to purchased, subcontracted and contractor manufactured items. G. M. Ellis, GD/Pomona chief of quality audit and procedures, is secretary.



INDONESIA TEAM — GD/Convair field service reps, Dave Weitzman, Vic Korski, Don Maxion, Phil Smith, smart in black caps, popularized as part of Indonesian national garb, pose with Anwar Djamil (center) of Garuda Airways public relations in front of Djakarta mosque. GD/Convair reps are teaching maintenance courses at Garuda's main base in preparation for arrival of 990As.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 19 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, September 18, 1963



GARUDA DELIVERY — Soekirman, counselor to the Indonesian Embassy in Washington, D.C., signs official papers accepting Garuda Indonesian Airways' first Convair 990A early this month in cabin of new jetliner. Across the table is GD/Convair President J. H. Famme with C. J. Dutton, GD/Convair contract administrator, at far left, and J. Thetekdjoe, Garuda resident representative at GD/Convair, at far right.

Garuda Accepts First Of Three Jet 990As

Garuda Indonesian Airways took delivery the first of the month on the first of three 990A jet airliners it has on order at General Dynamics/Convair.

The first completed plane was officially accepted Sept. 3 by Soekirman, counselor to the Indonesian Embassy in Washington, D. C., and Salim, chief of the Indonesian Supply Mission. J. H. Famme, GD/Convair president, represented the company at the acceptance ceremony.

Ferry flight to Djakarta, home base of Garuda operations, was slated for this week. The last two weeks have been devoted to pilot training flights at San Diego.

Flight crews from the Indonesian airline are currently taking flight school ground training at the GD/Convair plant.

Captain Partono, Garuda Airways president, headed the first group of flight personnel, including three other pilots and two flight engineers, who completed the production flight five-week ground school. They will return to Djakarta with the No. 1 990A.

Garuda will operate the Convair jet transports in Southeastern Asia on its network connecting Djakarta, Singapore, Bangkok, Hong Kong, Manila, and Tokyo.



AT HELM — Newly-elected officers of recently organized Management Club for GD/Electronics-San Diego are, from left, T. E. Morris, second vice president; L. A. DiVincenzo, treasurer; Rex Brouillard, board member; C. R. McGehee, first vice president; D. A. Graybill, president; C. E. Murdock and Noble Barnes, board members; George Oatman, secretary. Installation will be Oct. 1.

Recorder Installed For Urgent Messages

New equipment was installed last week in General Dynamics switching center to encourage use of the Private Wire Service and cut long distance telephone costs at GD/Convair.

An automatic answering and recording system, a Bell System Electronic Secretary, has been added to the switching center's equipment for faster transmittal of wire messages to all divisions and other locations within the United States.

The tape-recording equipment is specifically for transmittal of urgent messages. Employees may dictate their messages over the phone directly to the tape recorder for immediate transmittal to the addressee. Phone extension for direct connection to the recorder is 2004.

The new installation is a major move in a concerted effort to reduce the division's long distance telephone expense.

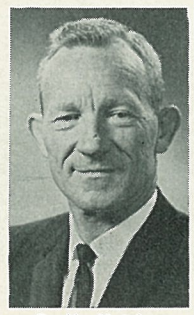
Division President J. H. Famme pointed up the importance of using wires instead of phone calls whenever possible in a notice which went last week to all department heads:

"If every person would weigh the difference between the av-

(Continued on Page 2)

R. M. Hatcher Now Director, Ops. Service

Robert M. Hatcher has been named director, operations service, for General Dynamics Corporation, succeeding R. A. Neale who continues as a member of the Corporate group on special assignments.



R. M. Hatcher

The announcement was made by Roger Lewis, president.

Organizational units within operations service include program analysis and evaluation; industrial engineering and operations support; reliability, quality control, value control.



J. Y. McClure

Coincident with Hatcher's appointment, J. Y. McClure was named director, reliability, quality control, value control.

Hatcher, a native of Milborn, Okla., attended schools in Wichita Falls, Texas, and later Texas State College and Southern Methodist University. He worked for North American Aviation, Inc. in Dallas, and later Ford Aircraft Division, Kansas City, where he was manager of final assembly before joining GD/Fort Worth in 1956. He was chief of organization and systems at GD/FW when he was assigned to GD/Convair in 1960 as manager of applied manufacturing research and process development. A year later he was named GD/Convair manager of operations planning and in 1962 was appointed director of industrial engineering. Subsequently he joined the Corporate staff.

McClure is a native of Georgia and attended the University of Southern Illinois, University of California and Curtiss-Wright Technical Institute. He joined Convair in San Diego in 1935 in sheet metal but left the company three years later to design racing planes. He returned in 1940 as an inspector, became a general supervisor in 1944 and the same year transferred to Fort Worth as chief inspector. In 1951 he was named GD/FW manager of quality control. Active for many years in the American Society for Quality Control, he was elected a fellow in 1959 and national president in 1960. He joined the Corporate staff in 1961.

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Crystal Appointed To Research Post

G. S. Crystal, formerly in industrial relations at General Dynamics/Electronics at Rochester, has been transferred to the Corporate Office in New York City as coordinator of personnel research, A. A. Hendrix, vice president-industrial relations, announced this month.

He reports to J. L. Budros, director of compensation and personnel development.

Crystal, a native Californian, received his bachelor's degree in industrial psychology from the University of California at Berkeley and his master's from Occidental. He joined GD/Astronautics in July, 1960, and served in industrial relations posts at Schilling AFB before shifting to GD/E in July, 1962.

GD/Convair Wins Study Programs

General Dynamics/Convair has received two contracts, totaling $207,000, from the Federal Aviation Agency under its current crash study program.

According to an FAA announcement, the San Diego division has been awarded a $103,000 contract to conduct a crash worthiness study and another for $104,000 to make a fuel containment structural design study.

These contracts are part of an overall FAA program to examine and combat hazards presented by aircraft crashes and crash fires.

Objectives of GD/Convair's crash worthiness study will be the development of an airplane structure that maintains cabin integrity during airplane deceleration, and a configuration that more effectively absorbs crash impact. Results of the research will be incorporated into a "Crashworthy Structural Design Handbook."

Under the fuel containment contract GD/Convair engineers will conduct a study and test effort to improve the design of conventional integral wing fuel tanks. They also will propose feasible concepts that offer the possibility of a major breakthrough in fuel containment, which is the primary means by which fires can be minimized or contained.

Other companies included in the program to be conducted the remainder of this year and early next year are All-American Engineering Co., Wilmington, Del., $334,000 for design and test of a high-strength bladder cell fuel system for modern transport aircraft that is resistant to crash impact and crash fire; Flight Safety Foundation, N. Y., $168,000 for tests in which two remote-controlled transport aircraft will be crashed to study fuel containment, crash loads, and survivability; University of Dayton Research Institute, Dayton, Ohio, $32,000 for instrumentation support in a program during which five surplus Air Force transports will be burned to measure heat and toxic fumes.

The contracts were awarded by the FAA's Installation and Material Service Procurement Service Branch, Washington, D. C. The studies will be conducted under the supervision of the FAA's National Aviation Facilities Experimental Center, Atlantic City, N. J.

GD/Convair Facility Approved By U.S. For On-the-Job Training

Half a dozen handpicked electrical workers have completed the first 80-hour course in General Dynamics/Convair's electronics assembly and soldering school under a government contract which makes the GD/Convair facility the only one in Southern California approved for on-the-job training.

The governmental contract, awarded by the Department of Labor's Bureau of Apprenticeship and Training under the Manpower Development and Training Act of 1962, provides for training of 40 GD/Convair people, said H. W. Rubottom, in charge of educational services. Rubottom pointed out that this is the first time the federal government has diverted funds to this area to help bear the expense of on-the-job training.

As far as is known at this time, GD/Convair is the only General Dynamics division to be approved by the government for on-the-job training. However, Paul Mali, training director at Electric Boat, reports that, as of February of this year, the Groton, Conn., division had hired 901 retrained people with machine skills who had received their training under the same type of program. Electric Boat worked closely with the Department of Labor, Department of Employment, and board of education to monitor the training to its requirements.

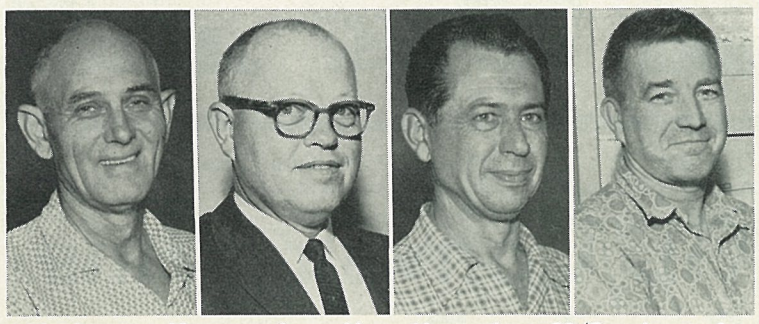
N. T. Jordan, Bureau of Apprenticeship and Training field representative, lauded Rubottom and his staff for the high quality of the already NASA-certified

(Continued on Page 2)



KICKOFF CLASS — First group of GD/Convair people receive thorough training in division's electronics assembly and soldering school under new government contract for on-job training. Standing, N. T. Jordan, Dept. of Labor field representative, inspects progress with H. W. Rubottom, educational services head, and L. E. Cook, certified instructor.

Log Book Entries



Wearing new 25-year service emblems this month at GD/Convair are, from left, J. R. Bailey, Dept. 133, J. E. Lampman, Dept. 6-1, J. L. Martin, Dept. 171, R. B. Maddox, Dept. 141.

Retirements

CONVAIR

ADAMS—Lloyd L., Dept. 401-4. Seniority date July 18, 1955, retirement effective Aug. 29, 1963.

BALDWIN—Daniel T., Dept. 31. Seniority date Feb. 5, 1957, retirement effective July 5, 1963.

BRYANT—Delbert J., Dept. 25. Seniority date June 6, 1952, retirement effective Aug. 30, 1963.

COPPINGER—Ernest E., Dept. 25-5. Seniority date June 16, 1950, retirement effective Aug. 31, 1963.

DURST—Cedric M., Dept. 3-1. Seniority date Sept. 19, 1950, retirement effective Aug. 30, 1963.

FARNSWORTH—Hugh A., Dept. 140. Seniority date Nov. 18, 1946, retirement effective Aug. 30, 1963.

HUFFMAN — Charles M., Dept. 42-2. Seniority date Sept. 20, 1950, retirement effective Aug. 30, 1963.

JONES—Edward, Dept. 48-11. Seniority date April 14, 1950, retirement effective Aug. 30, 1963.

McCOLLUM—George D., Dept. 48-21. Seniority date Jan. 10, 1951, retirement effective July 15, 1963.

MELTON — Calvin N., Dept. 400-5. Seniority date March 12, 1951, retirement effective Aug. 30, 1963.

MERRITT—Frank G., Dept. 3-1. Seniority date Dec. 1, 1942, retirement effective Aug. 30, 1963.

OWENS—Harvey M., Dept. 140. Seniority date Aug. 17, 1942, retirement effective Aug. 30, 1963.

RAEDEL — Reinhold W., Dept. 41-6. Seniority date April 27, 1951, retirement effective Aug. 30, 1963.

SAGE—Robert A., Dept. 401-7. Seniority date Feb. 1, 1951, retirement effective Aug. 30, 1963.

SCHEARING—William A. Sr., Dept. 42-1. Seniority date Dec. 11, 1950, retirement effective Aug. 30, 1963.

SEARS—Edna M., Dept. 44-5. Seniority date Oct. 1, 1956, retirement effective Aug. 30, 1963.

SNOW—Mason R., Dept. 25-1. Seniority date Dec. 12, 1950, retirement effective Aug. 30, 1963.

SUMMITT—Vane L., Dept. 3-4. Seniority date July 9, 1942, retirement effective Aug. 30, 1963.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Aug. 23 and Aug. 30.

Dept. 14, Traffic & Stores: D. M. Luscomb, $40.30.

Dept. 101, Sheet Metal: J. H. Hammer, $38.70; H. M. Woodard, $20.50; J. B. Bence and C. M. Szymczak, joint award, $7.50 each.

Dept. 102, Processing: A. Stieringer, $10.

Dept. 115, Machine Shop: K. C. Brown, $10; E. W. Carter two awards, $29.

Dept. 119, Metalbond Fabrication & Assembly: F. H. Felchlin and L. O. Smith Sr., joint award, $5 each.

Dept. 128, Plastics: E. P. Newman, $10; D. J. Bridges and E. Carpenter, joint award, $40.35 each.

Dept. 131, Experimental: J. A. Gliebe and A. J. LeBeau, two joint awards, $14.10 each.

Dept. 141, C-141 Empennage Assembly: M. Doerr and M. M. McCaskey, joint award, $59.35 each; J. Caldwell and R. F. Yturralde, joint award, $6.25 each; M. M. Lopez, $13.60.

Cost Improvement Proposals for period ending Aug. 23.

Dept. 34, Purchasing: G. H. Blain.

Dept. 93, Cost Accounting: E. R. Hoag, A. A. Vernon.

Dept. 131, Experimental: W. Martin.

Lost & Found

CONVAIR

LOST—Copper bracelet with keys and key ring attached Sept. 3 between Bldg. 19 and parking lot at Kettner & Sassafras. Merle Fullerton, ext. 2003.

Personals

CONVAIR

The Gunnard Peterson family acknowledges with deep gratitude the kindness of the many GD/Convair employees who sent expressions of sympathy at the time of his death.

Elsa Peterson and sons.

Service Emblems

CONVAIR

Service emblems due during the period Sept. 16 through Sept. 30.

Twenty-five-year: Dept. 171, Robert Buss.

Twenty-year: Dept. 14-8, M. C. Walter; Dept. 42-6, Ada M. Shipman; Dept. 131, O. J. Anderson.

Fifteen-year: Dept. 6-2, T. A. Parker Jr.; Dept. 14-3, B. F. Randall; Dept. 119, G. H. Parker.

Ten-year: Dept. 6-3, W. W. Eddington; Dept. 15-0, Dorothy M. Stinson; Dept. 16, H. R. Brown, J. W. Davis, F. A. Reed; Dept. 23-1, T. B. Thompson.

GD/ELECTRONICS

Ten-year: Dept. 14-10, J. H. Redman; Dept. 71-00, R. M. Patterson; Dept. 72-00, C. B. Vinson; Dept. 74-40, F. J. Lindahl.

Convair Club Planning Dance

A carefree South Seas evening is in store for GD/Convair Management Club members and guests this Saturday, Sept. 21, at Del Webb's OceanHouse on Pacific Hwy.

Tickets, at $2.50 a couple, will be on sale the rest of this week at in-plant outlets, or at the door the night of the dance, said Bert Wood, general chairman.

Gay sports wear will be in order for the informal affair with a prize going to the most attractive South Seas outfit.

Earl Fisher's Orchestra will play for dancing from 9 p.m. to 1 a.m. in the S.S. Cutty Sark Ballroom. Bobbie Hanson, Miss San Diego, will entertain with dance routines in the tropical theme twice during the evening. A raffle will be held and cash prizes given.

Controller's department is sponsoring the fall dance.

Stephenson Transfers To Post at GD/Astro

F. A. Stephenson, with GD/Convair since 1941, except for a World War II stint as an Air Corps pilot, has joined GD/Astronautics as chief engineer-propulsion (Dept. 528-0).



F. A. Stephenson

The appointment was announced earlier this month by Mort Rosenbaum, vice president - research, development and engineering. Stephenson will report to W. W. Withee, vice president-engineering.

His GD/Convair service includes assignments in inspection, as a thermodynamics engineer and group engineer, chief of environmental analysis, and chief technical engineer.

Recorder Installed For Urgent Messages

(Continued from Page 1)

erage cost of $4 for a long distance call and $1.60 for a wire message before picking up the phone, the division's phone bills could be cut drastically."

A reduction of at least 20 per cent, or around $25,000 a year, is the minimum goal, said R. H. Williams of plant engineering who is responsible for the division's communications.

All General Dynamics people located at Plant 1, including Electronics and Astronautics, are urged to cooperate. Posters will be spotted in strategic locations in such areas as engineering, purchasing, service parts which need to make the most contacts with outside sources. Stickers will be placed on phones in the same sections as visual reminders. They will carry such slogans as "Don't Call—Write," and "Is This Call Necessary?"

In urging greater use of the private wire network linking all General Dynamics division bases and sites, Williams said that wire messages usually can save time at both ends of the line, especially with the time differential across the country, and provide written verification of queries and replies.

Routine messages may be filed as usual by sending a typewritten form to the switching center. Emergency messages will be handled within minutes through the new recorder.



TRIAL RUN — Dick Williams, GD/Convair communications coordinator, phones first message directly to new tape recorder installed last week in GD switching center for immediate transmittal of urgent wires. Merle Fullerton checks operation of new equipment.

GD/Convair Facility Approved By U.S. for On-the-Job Training

(Continued from Page 1)

soldering school.

"GD/Convair was the first company or agency of any kind in the Southern California area to submit an acceptable on-the-job training program for skill improvement or upgrading," he emphasized. "So far there are only five approved training facilities in the state and the others are all located in the San Francisco Bay region.

"Improvement of skills or the addition of new skills is extremely important at this time to offset the inroads of automation and unemployment," he added.

Rubottom said that the 80-hour courses, which double the time formerly devoted to soldering training, will certify each graduate to NASA requirements—a valuable asset to each individual and a boost to the company's capabilities in modern methods of electronics assembly.

Each person chosen by supervision for the course is interviewed first by the Department of Employment. And, the entire program was enthusiastically approved by the International Association of Machinists, one of the signatory parties before initiation of the current training program the last week in August.

L. E. Cook, GD/Convair educational services instructor who has been qualified as a NASA instructor and examiner, is directly responsible for the training.

More than 60 hours are devoted to assembly and soldering instruction, with a thorough briefing in blueprint reading and job instruction added to the basic material. Safety and housekeeping, care of tools and equipment, specification study to comply with military and governmental agency requirement are covered.

Graduates must pass a stringent examination and turn in an acceptable sample board proving that they measure up to the very highest qualifications before they are signed off as certified assemblers.

Students in the inaugural class were Sam Stearns, Charles Mikula, R. J. Ratliff, Anna T. Cunnion, Carmelita Slack, and Marie L. Ervast, all of Dept. 171. Second group will enter the training early next week.

Mellinger Appointed To Systems Position

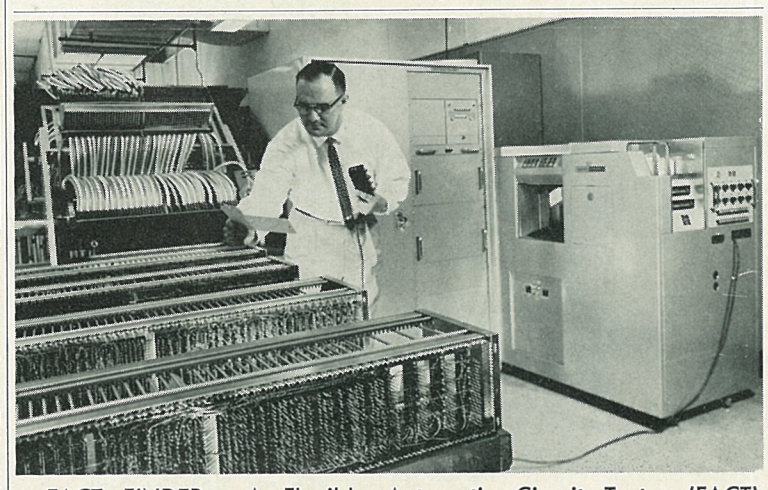
Harry A. Mellinger has been named manager of systems engineering and reliability (Dept. 380-0) for GD/Astronautics Atlas weapons system (AWS) program by W. L. VanHorn, vice president and program director.



H. A. Mellinger

Colorado born, Mellinger attended San Diego public schools and San Diego State College. He holds a bachelor's degree from University of Maryland, and has attended George Washington University, Washington, D. C.

His General Dynamics service dates from 1940 when he joined GD/Convair.



FACT FINDER — A Flexible Automatic Circuit Tester (FACT), right, normally used to check out missiles, has been adapted by engineers of Stromberg-Carlson division of General Dynamics to test circuit cards and patch boards for electronic telephone exchanges.

Horne Will Speak At Club's Opener

C. F. Horne, General Dynamics/Pomona president, will be featured speaker at the first official meeting of the newly-organized GD/Electronics - San Diego Management Club.

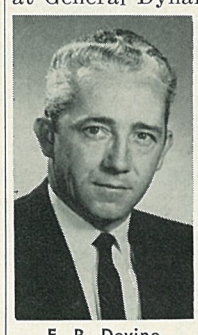
Date of the gathering has been set for Oct. 1 with a 5:30 p.m. social hour to be followed by a 7 o'clock prime rib dinner at Catamaran Hotel on Mission Bay.

D. A. Graybill, president of the new group, and his board of control will be installed and take over the reins of the club.

Tickets, at $3.50 each, are now available to members through the ticket salesmen in each GD/E department, said T. E. Morris, second vice president and program chairman.

Devine Heads GD/E RANGER

F. P. Devine has been appointed manager for RANGER Radar at General Dynamics/Electronics-San Diego, according to a recent announcement made by J. L. Lombardo, general manager.



F. P. Devine

In his new assignment, Devine will be responsible for managing and directing all phases of the radar subsystem for the RANGER V spacecraft. GD/Electronics is developing the space radar under a contract awarded by the Jet Propulsion Laboratory of Pasadena, Calif.

Devine joined the company in 1960 as assistant electronics project engineer in the former GD/Convair electronics department. He transferred to GD/Electronics at its organization in the spring of 1961. He was GD/Electronics chief of design engineering before his current assignment.

He holds a bachelor of science degree in mechanical engineering from Tri-State College, Angola, Ind., and an MBA in management from Xavier University, Cincinnati, Ohio. He also has done graduate work in electronics and management at the University of Southern California and the University of California.

Gleason Transferred, Formanek Succeeds

Martin Formanek has been appointed Small Business Administrator at General Dynamics/Convair, replacing Warren Gleason, who has transferred to GD/Pomona.

Formanek reports to W .H. Parry, general purchasing agent.

In his new post, Formanek will represent the division as its small business liaison officer and will have complete responsibility for GD/Convair's vendor relation activities.

He joined GD/Convair's material department in 1941 and has held supervisory positions in both material and procurement departments over the 22 years since. He was purchasing agent before his present appointment.

Hardison To Teach Spanish Classes

J. M. Hardison of GD/Convair again will instruct Spanish courses at the Hoover Adult Evening School this fall with the school semester beginning this week.

He will teach both beginning and intermediate courses, one night a week each, 6:30 to 9:30 p.m., in Room 219 of Hoover High School, El Cajon and 44th Sts. Beginning Spanish will be taught Tuesdays, intermediate on Thursdays.

Registration may be made by attending sessions this week or next at either class.

General Dynamics NEWS

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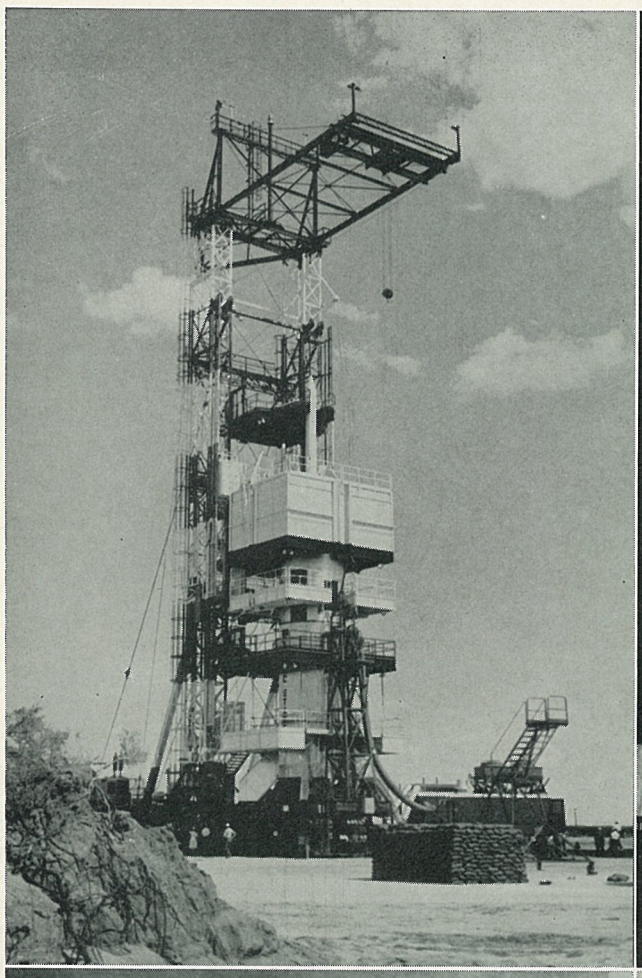
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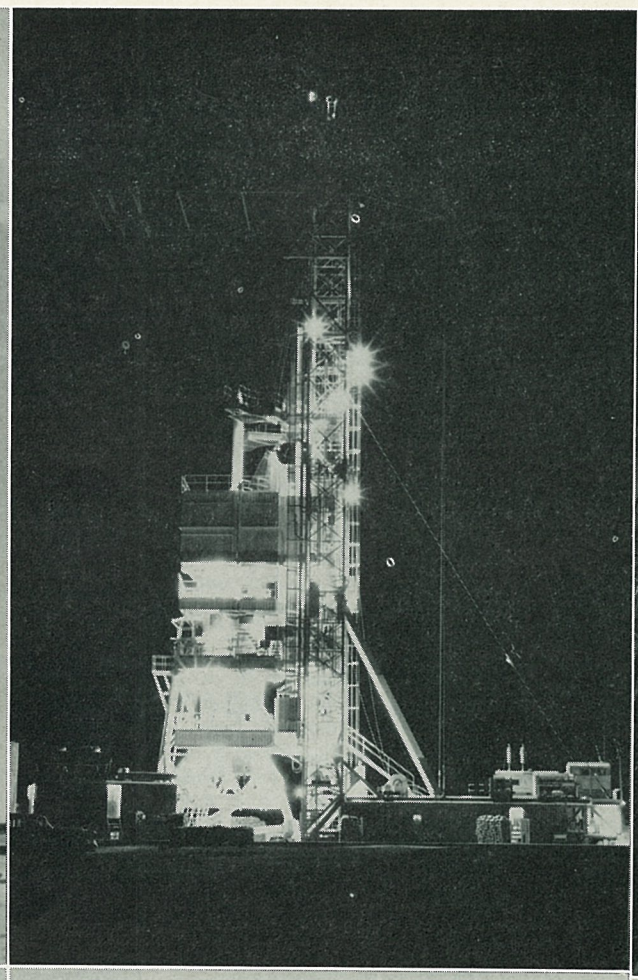
Fort Worth Editorial Offices, Col. 72, Adm. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

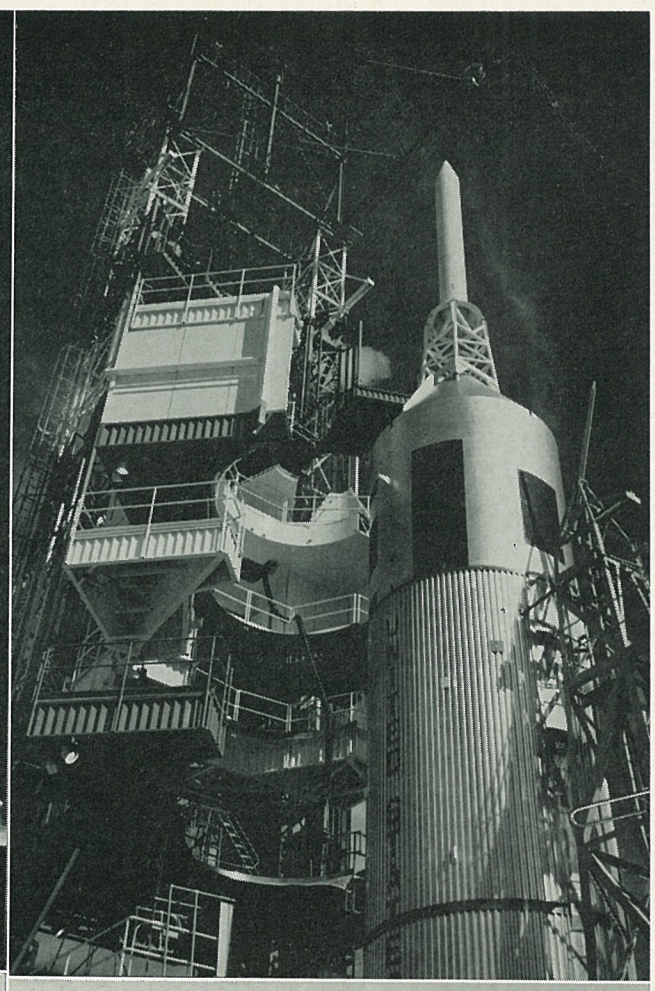
Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

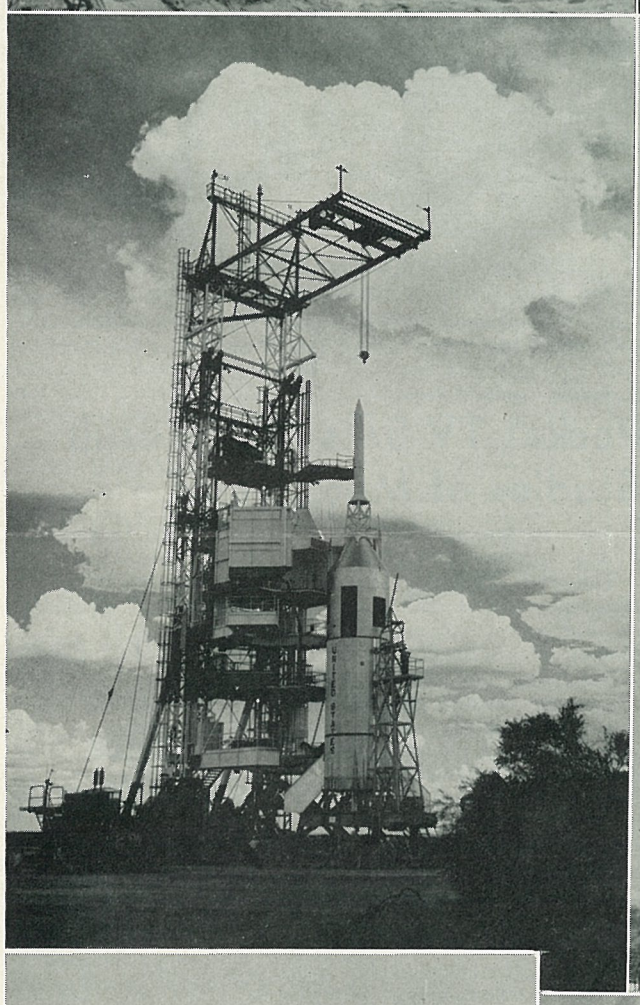
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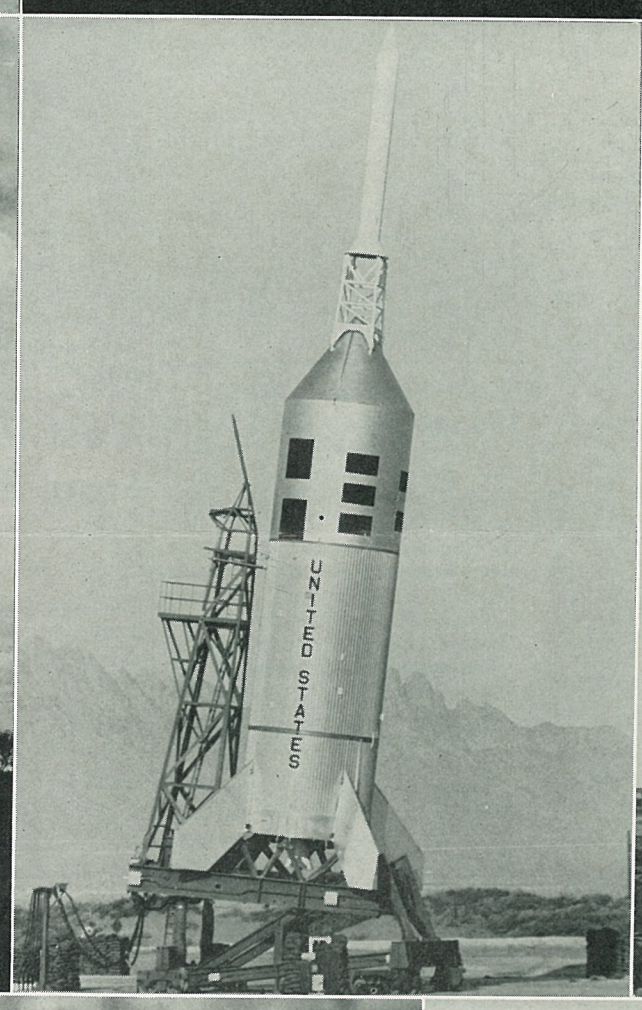
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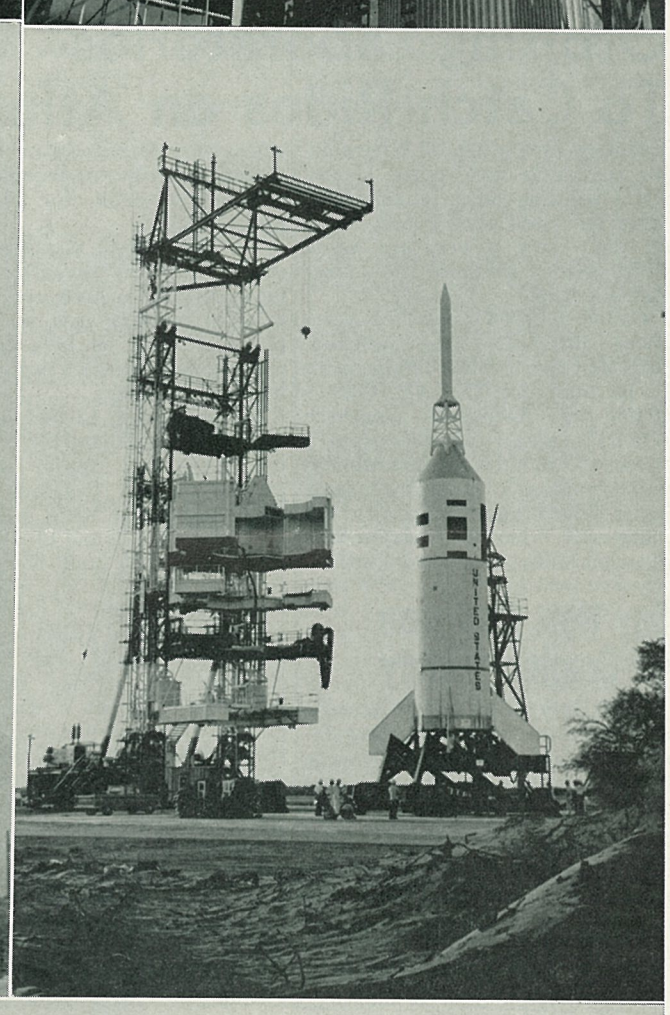


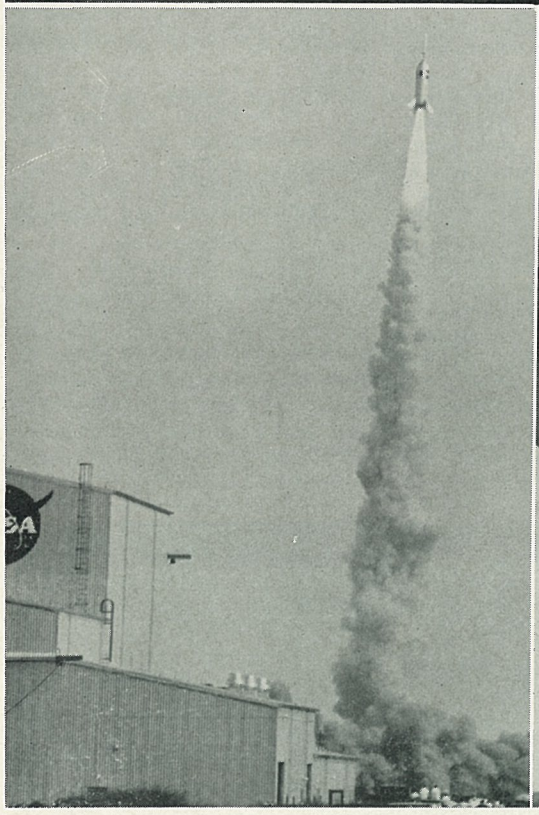


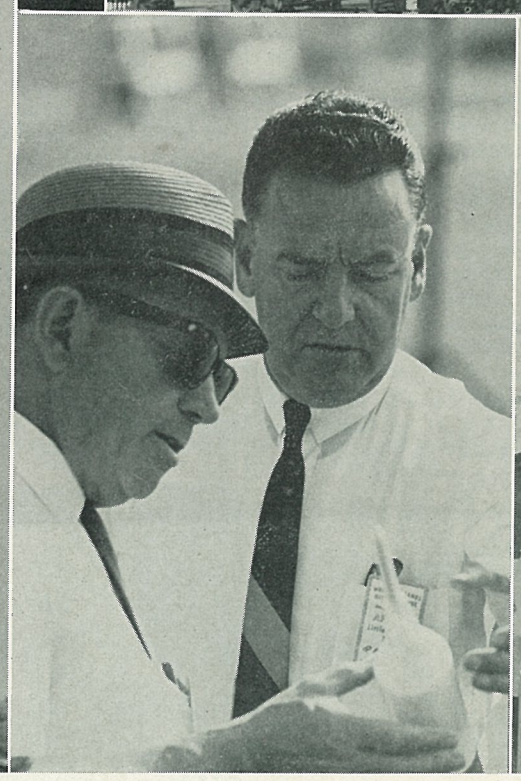






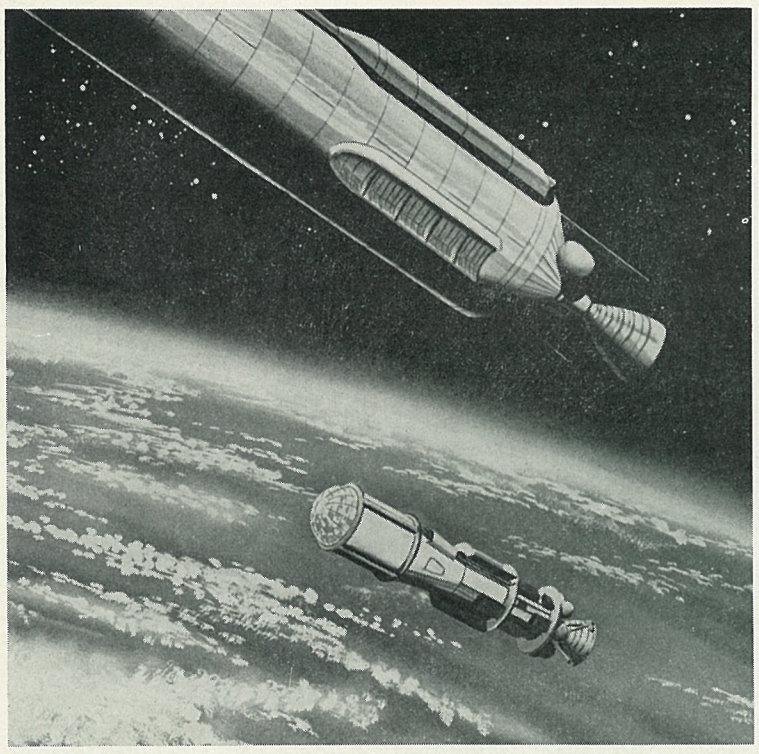








"CLEAN" LAUNCH — Sequence photos taken during countdown hours and blast-off of Little Joe II, GD/Convair-built launch vehicle, at White Sands Missile Range, N.M., Aug. 28, shows pre-launch activities during preceding day and night leading to Wednesday morning firing of "bird." Termed "extremely satisfactory," 99-second flight qualified Little Joe II as launch vehicle for NASA's Apollo Program spacecraft testing. Test objectives of booster integrity, performance, dynamics, stability were performed perfectly, say GD/Convair officials on spot. Data accumulated on drag, flutter, temperature, accelerations demonstrated that objective requirements could be met. In words of NASA personnel participating, "it was one of cleanest and most professional" launches observed. Little Joe II reached height of 24,000 ft. at speed exceeding Mach 1. Out of 62 telemetered measurements 60 were obtained right to impact; all 17 landline measurements operated satisfactorily. There was no apparent roll and practically no yaw. Launcher stood up better than predicted. Lower center, GD/Convair President J. H. Famme talks over launch with New Mexico Governor Jack M. Campbell. At far right are top NASA observers: Robert O. Piland, acting manager—Apollo Spacecraft Project, NASA-MSC; Walter C. Williams, deputy director mission requirements and flight operations, NASA-Manned Spacecraft Center, Houston, Texas; Wesley E. Messing, resident manager NASA-MSC at WSMR; Col. J. C. Bane, deputy commander, WSMR. This was first flight test connected directly with development of Apollo spacecraft to carry three-man crew to and from moon. Little Joe II will proof North American-built Apollo craft before actual space missions.



GOING IT ALONE — GD/Astronautics will build five orbiting laboratories, called SATAR, for Air Force for scientific probes. In this sketch by John Sentovic, SATAR is shown breaking away from Atlas which carried it "piggyback" into space. "Hitchhiking" SATAR which gets free ride on Atlas launched for other programs is expected to provide scientific knowledge at fraction of cost of other type orbiting spacecraft.

Orbiting Laboratories To Catch Rides on Atlas

Money-saving orbital laboratories that ride into space aboard Atlas vehicles being launched for other purposes, then go into orbit on their own power, are being developed at General Dynamics/Astronautics.

Called SATAR (Satellite-Aerospace Research), the program calls for five orbital laboratories to be built for the Air Force's Office of Aerospace Research (OAR).

These hitchhiking laboratories will provide a means of conducting a wide range of scientific experiments in orbit at a fraction of what they would cost otherwise, according to Sam L. Ackerman, Astro's vice president and program director for electronic programs.

SATAR will be capable of circular or highly eccentric orbits, high-altitude probes, and high-velocity re-entry into the atmosphere. It will be able to carry experiments weighing several hundred pounds.

Bullet-shaped, 12 feet long and 30 inches in diameter, SATAR will have two major sections, propulsion and payload. In the first will be a solid propellant engine, guidance and attitude control, telemetry, and power subsystems for injection into orbit. In the second will be power, telemetry, command systems and the scientific payload. The latter is designed to provide maximum versatility so that a wide range of scientific experiments can be accommodated without expensive changes. Supporting systems can be arranged for long or short orbit life at minimum cost, Ackerman said.

SATAR will be positioned "piggyback" just above Atlas' propulsion section. As Atlas engines shut down, high in space, the SATAR will separate with an attitude control system preventing it from tumbling and positioning it for injection into orbit. After about 15 minutes of coasting time, SATAR will ignite its engines and complete the orbit injection.

"The SATAR program takes advantages of Atlas' ability to carry excess loads and benefits the nation's entire scientific community," Ackerman added.

Testing of the orbital laboratories will begin this fall with initial flights slated for the spring of 1964.

SATAR is an outgrowth of the nonorbital Scientific Passenger Pod program Astronautics has conducted for OAR since 1961.

Nonorbital pods were of two types—a standard pod and a recoverable pod. The former furnishes information by radio until it burns on re-entering the earth's atmosphere. Recoverable pods can bring experiments back safely through the atmosphere and land them for recovery.

While OAR provides direction for the program, contract surveillance is the responsibility of Ballistic Systems Division.

Day Now Chairman Of Graphic Society

H. B. Day, GD/Convair graphic reproduction supervisor, was installed first chairman of the newly-organized Society of Reproduction Engineers, San Diego Chapter, at ceremonies Sept. 16 at La Mesa Cotton Patch.

C. J. Taylor of GD/Astronautics is first vice chairman, and Charles Barber of GD/Electronics, second vice chairman.

Charter of the new group was presented at the Monday meeting. Membership already has reached 68 people in the San Diego area, who are engaged in any phase of the reproduction field.

Heller and Albert Join Value Panel

Two GD/Astronautics men, E. D. Heller and Sid Albert, took key roles in a special panel discussion on "Value Engineering in Municipal Government" Sept. 10 at the King's Inn, San Diego.

The affair, under sponsorship of the San Diego Chapter, Society of American Value Engineers, featured a panel of top municipal officials from throughout San Diego County. Heller, Astro's manager of value control, made a presentation on the philosophies and techniques of value engineering. Albert acted as moderator.

Information Display Group Names Prexy

James H. Redman of GD/Electronics-San Diego has been chosen president of the San Diego chapter of the Society for Information Displays.

The non-profit organization was formed in 1962 to encourage the scientific, literary and educational advancement of information display and its allied arts and sciences.

Redman, who has been with General Dynamics for 10 years, is requirements representative, based at GD/E Plant 2.

WASH. U. ALUMNI TO MEET SEPT. 30

University of Washington Alumni have been invited to a cocktail party, 6:30 p.m., Sept. 30 in Cuyamaca Club, U. S. National Bank Bldg. Purpose is to form a local alumni organization. Contact is Don Welch, GD/Astro ext. 3350.

In-Plant Study Will Commence In Nine Fields

There are still openings for General Dynamics people at in-plant courses started this week under sponsorship of GD/Convair educational services in cooperation with San Diego Junior Colleges.

Registration will be accepted until Sept. 25, said Wayne Turner, educational services coordinator.

Although all of the nine courses will be held at GD/Convair Plant 1, they are open to General Dynamics people connected with any San Diego division—GD/Convair, GD/Electronics, GD/Astronautics, and General Atomic.

Turner especially drew attention to the course in Basic Hydraulics, which is being offered in-plant for the first time. He said that it is particularly valuable to persons working toward their FAA airframe and powerplant licenses as well as important to people now employed in any phase of hydraulic work.

This course is taught by Walter Gill on Wednesdays, 4:15-7:15 p.m., in Bldg. 14, Room 7, at Plant 1.

With the exception of the course in Technical Specifications Writing, the following are still open for enrollment: Written Communications for Supervisors; Introduction to Technical Writing, Intermediate Technical Writing, Technical Writing Workshop, Basic Hydraulics, Basic Electricity, Basic Electronics, Basic Electronics—Theory and Components.

Turner may be contacted at Plant 1, ext. 491.

Mass Said in Atlas Silo at Altus AFB

Unless someone can refute the claim, Chaplain (Capt.) Gerard M. Brennan of Altus AFB, Okla., is the first Air Force chaplain to say Mass deep within an Atlas silo launch center.

Chaplain Brennan performed the religious services recently after spending 26 hours at the Atlas launch complex. (He slept only two hours.)

Explaining his visit, Chaplain Brennan said:

"I feel that it is my responsibility to understand the factors involved in the missile operation so I can better understand the men I am here to serve."

Computer Customers Visited in Europe

Robert Hayde, senior customer engineer for GD/Electronics at San Diego, left last week for Europe on a six-months' assignment which will take him to locations of major computer users in Western Europe.

He will join E. J. Jelen, European representative-electronics for General Dynamics, to provide technical assistance during the tour of potential computer customers in Europe.

In his GD/Electronics post, Hayde reports directly to Charles McGehee, GD/E manager of product support at Plant 2.

Surveyor Program Scheduled on Coast

General Dynamics people will have an opportunity to hear a detailed discussion of the Surveyor program at the Oct. 3 meeting of the San Diego Chapter, Aerospace Electrical Society.

W. E. Giberson, Surveyor project manager, NASA Lunar and Planetary Project Office, Houston, Texas, will describe the program which will lead to an unmanned exploration of the moon's surface prior to the Apollo manned landing.

All interested GD people are invited to attend the session in the IAS Bldg. on Harbor Drive at 7:30 p.m.

Heading the local chapter as current president is T. W. Ochodnicky of GD/Convair engineering.

Model of Mercury Ops Room Given Smithsonian by GD/E

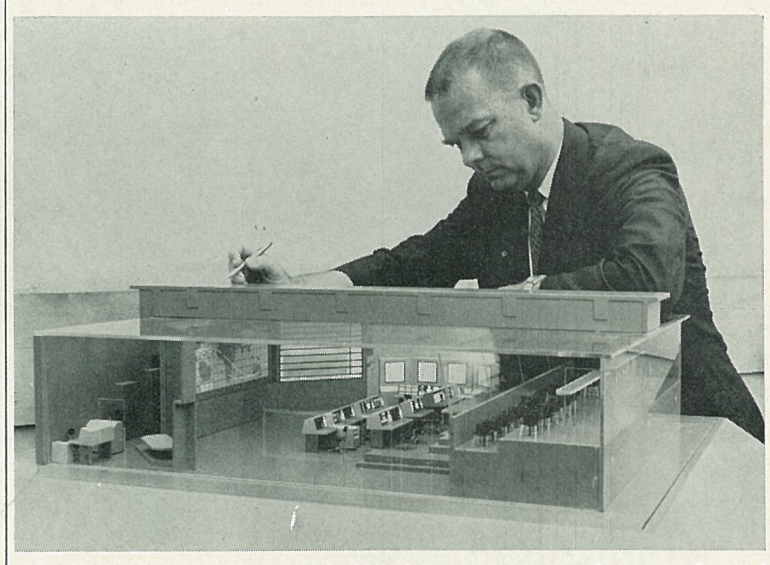
General Dynamics/Electronics-San Diego presented a scale model of the Project Mercury Operations Room to the Smithsonian Institute in ceremonies at Washington, D.C., last week.

The model is an exact replica of the operations room which was the vital nerve center during all of NASA's Mercury flights from Cape Canaveral. It will be placed on permanent exhibit in the National Air Museum along with the Mercury capsules occupied by Alan Shepard and John Glenn.

Congressman Bob Wilson (R-SD) made the presentation on behalf of General Dynamics to Dr. Leonard Carmichael, secretary of the Smithsonian Institution, and Philip S. Hopkins, director of the National Air Museum. George M. Low, Deputy Director Programs, Office of Manned Spaceflight, represented NASA.

GD/Electronics officials at the ceremony were General Manager John L. Lombardo, Arch H. Wisdom, manager of research and engineering for data products, and Payne B. Johnson, manager of communication.

Wisdom was GD/E program manager for the Project Mercury monitor and control display systems which were designed and built in San Diego and installed at Cape Canaveral and Bermuda.



HISTORIC MODEL — Arch Wisdom, manager of research and engineering for data products at GD/Electronics-San Diego, inspects scale model of Project Mercury Operations Room before shipment to Smithsonian Institution where it will be on permanent display.

Vest Pocket TV Sets May Result From Studies of Metal Films

Slicing it thin is the job of the physical electronics laboratory group at General Dynamics Electronics-Rochester. And thin means really thin as researchers into properties of metals produce almost invisible "films" of common metals, looking toward the time, not too far away, when thin film electronic circuits may make possible match-box size television sets or vest-pocket computers.

In discussing work with thin films, which has been carried on at GD/Electronics for several years, Dr. Carl Drumheller, manager of the physical electronics laboratory, says that many ordinary materials show strange and amazing properties when made exceedingly thin.

And thin is really thin when a stack of a million such films would barely be an inch high, or 5,000 could be slipped into a crack too small for a sheet of paper.

Some of the new films under study are only 10 atoms thick, said Dr. Drumheller, who presented results of the studies before the International Commission for Optics in Marseilles, France, Sept. 8-15.

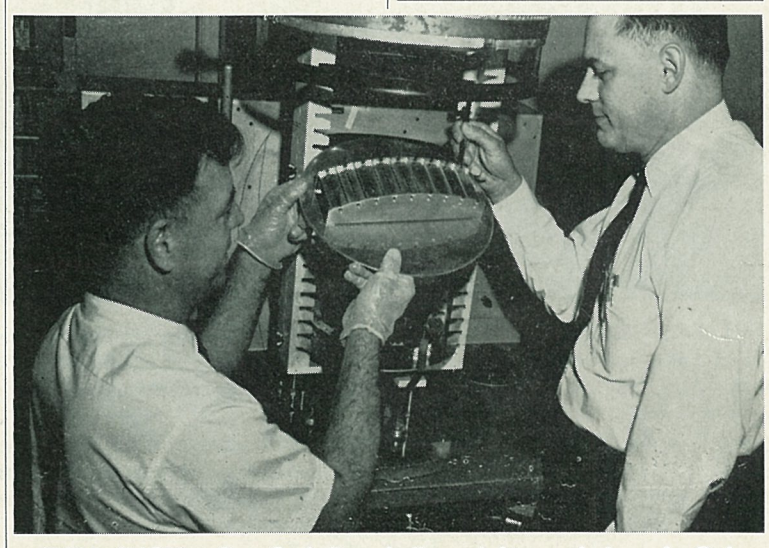
In his paper on "Theory of the Optical Properties of Thin Polycrystalline Metal Layers," Dr. Drumheller explained that purpose of the research is to learn as much as possible about the fundamental electrical properties of various metals and insulators when they are so thin.

Author Completes Booklet on Fatigue Under Navy Contract

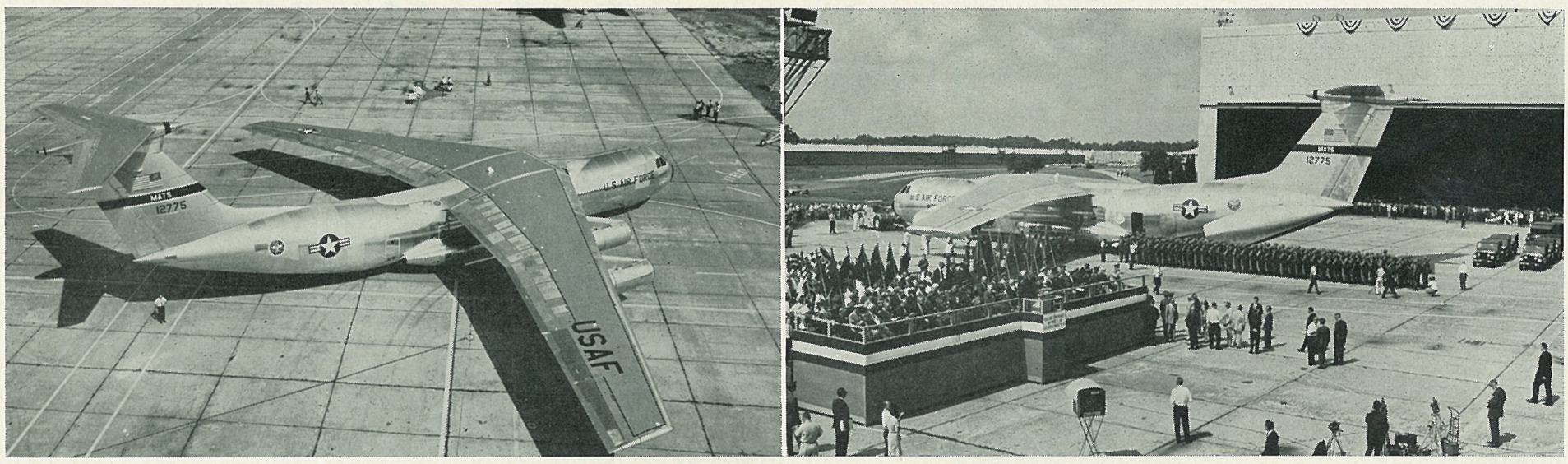
Final material for the design manual on structural fatigue compiled over the last year and a half by C. R. Smith, design specialist in GD/Convair fatigue laboratory, has been submitted to the Bureau of Naval Weapons for approval.

"Tips on Fatigue," as the handbook will be known, contains general information on structural fatigue for draftsmen, shop foremen and inspectors. Cartoons illustrating the do's and dont's in design of structures were drawn by Willy Goldsmith and Tony Adams, GD/Convair illustrators.

When published, it will be available through the Government Printing Office, Washington, D.C. Preliminary copies have been sent to other GD divisions and placed in the GD/Convair engineering library.



THIN SLICES—Dr. Carl Drumheller, right, and Joseph Galen, GD/Electronics-Rochester, pursue "thin film" research into properties of metals.



C-141 UNVEILING — At left, first Air Force C-141 StarLifter spreads its wings across the concrete apron at Lockheed-Georgia Co., Marietta, Ga., after Aug. 22 rollout. (Note relative size of spectators!) World's largest transport can airlift 90,000 pounds and has wing span of 160 feet. At right is shot during coming-out ceremony at Marietta plant, attended by key personnel from GD/Convair which is building empennages for huge craft. First flight is set for December.

Atlas Agena Selected For Lunar Trips

GD/Astronautics' Atlas space launch vehicle, in combination with an Agena second stage, has been designated to launch five instrumented spacecraft on close-range lunar photographic missions by 1966.

The announcement was made last month by National Aeronautics and Space Administration (NASA), whose Langley Research Center, Hampton, Va., issued requests for proposals to manage the lunar orbiter mission.

The moon orbiter brings to three the number of Atlas-launched spacecraft to make exploratory lunar missions in advance of the Apollo manned lunar landing mission.

Others are Ranger (hard lunar landing spacecraft) to be launched by Atlas-Agena, and Surveyor to make a soft landing after launch via an Atlas-Centaur combination.

EB's J. V. Leonard Joins Naval Panel

J. V. Leonard, engineering design manager at GD/Electric Boat, joined senior Naval officers Sept. 14 for a panel discussion on "Naval Shipbuilding Through the Next Decade."

The panel was sponsored by the Navy League at its East Coast Regional Convention in Boston.

Participating were Rear Adm. William A. Brockett, Chief of the Navy's Bureau of Ships; Rear Adm. F. V. Hiles, director of the Navy's Ship's Characteristics Division; and Capt. F. C. Jones, Commander, Boston Naval Shipyard.

GD/Astro Engineers Finish UCLA Course

Three GD/Astronautics engineers were among 229 participants in a special Reliability and Statistical Methods in Industry course held by the engineering department, UCLA.

W. F. Rice, senior quality control engineer; Curtis M. Smith, senior reliability engineer; and John Matiash, senior standards laboratory engineer, received certificates of completion.

GD/Astro Technical Publications Known as 'Missilemen's Bible'

Initial Air Force requirements of General Dynamics/Astronautics in developing the Atlas weapon system centered primarily in three major fields — hardware, personnel and technical data.

Today, Astronautics' customer services department under Director R. C. Harbert concentrates a majority of its efforts in these same fields.

Service parts (hardware spares) and service engineering (direct assistance to Air Force missile crews) are two major functions involved. The third, technical publications, carries on a task it has performed for years.

The output of this group in the initial activation of Atlas bases is now legendary. If pages of all pulications issued were laid end-to-end, they would stretch 2½ times the distance covered in the three-orbit flight of Astronaut John Glenn.

Subsequently, thousands of change-pages have been issued and distributed to cover changes in the Atlas and its support equipment.

Each of these pages has been deemed as important to the overall Atlas mission as the hardware items they cover for a simple reason — Air Force regulations specify Strategic Air Command missilemen must follow instructions and procedures in technical manuals to the letter. Thus they become, in a sense, the missileman's "Bible."

Astronautics shoulders an unusual burden in preparation, verification and distribution of these publications. They must be exact to the smallest detail. They must be written in the clear, concise language of the missileman. Illustrations and diagrams must be perfect. And the publications must be ready and available when and where needed.

Handling this task is a group considered unique in the aerospace industry, both in size and complexity.

A. H. Gross, manager of technical publications, heads the function that includes writers, editors, illustrators and reproduction specialists as well as direct representatives of such important functions as purchasing, communication, receiving, and various reliability control functions.

This task force works out of Bldg. 51 at GD/Convair.

Also in the same area is an unusual group of Air Force representatives making up what is known as the Central Technical Order Control Unit (CTOCU).

The presence of the CTOCU is indicative of the vital interest shown by the Air Force in Astronautics-prepared technical publications. It is, in brief, a group that speaks the language of the SAC missile crews, the logistics support units and the Air Force command units. It provides invaluable assistance in final decisions affecting every type of technical publication. And it has made possible expediting problem solutions affecting Atlas publications.

Updating of existing publications to keep pace with constant changes in the Atlas weapon system configuration constitutes the majority of the present work load. In addition, there are technical reports to Air Force and space agencies concerning Astronautical scientific, engineering and hardware programs, with the trend within the aero-hardware programs.

Thus, technical publications serves any and all Astro programs.

Some indication of the magnitude of updating required in existing publications is evidenced in the fact that each Atlas launch complex has its own technical library of approximately 250 separate manuals containing over 250,000 pages of technical data.

Preparation of contractural technical reports for Astro customers is another key function in technical publications in keeping with the trend within the aerospace industry toward more study contracts involving little or no hardware. These reports are often the only deliverable items on a contract and even more often as the only items seen by the customer's decision-making management.

Providing all skills required for this type work is a special reports center which has recently been expanded to meet requirements. Services range from report planning through publication and distribution.

Recently, Harbert reviewed Astronautics' pioneering work in the field and forecast increased importance of technical publications to Astro in the future.

"We can emphasize our experience, innovations we have introduced and the integrated publications capability we possess in bargaining for future business," Harbert said. "And this business could well include services to other defense and space industries."

Key publications leaders include: J. D. Willis, chief of AWS manuals; D. P. Bender, chief of special documentation; A. C. Perry, chief of publications operations; and H. B. Cleveland, program office support project engineer.

NASA Arranges For Agena Use

A new agreement involving the Atlas-boosted Agena launch vehicle has been signed by the National Aeronautics and Space Administration (NASA) and the Air Force.

The Agena is an Air Force-developed vehicle which NASA has used previously on such programs as Mariner, Ranger, etc.

Under terms of the agreement the Air Force will continue to have design, engineering and acceptance testing responsibilities for the basic Atlas vehicle and the Agena D stage with NASA procuring these vehicles from the Air Force.

Modifications for special missions in the basic vehicles will be the responsibility of NASA, including such items as the shroud and adapter, trajectory calculations and integration of the space launch vehicles. For these, NASA will make direct procurement arrangements.

NASA launches of the Atlas-Agena combination will be centered at Complex 12 at Cape Canaveral, while the Air Force will continue to use Complexes 13 and 14. GD/Astronautics has conducted launches from all three complexes over a period of years.

Not covered in this agreement are Atlas-Agena vehicles for the Gemini program.

GD MEN PARTICIPATE IN VALUE MEETING

F. J. Traversi, GD/Astronautics vice president—administration, will serve as panelist today (Sept. 18) at a Value Assurance Symposium, sponsored in Los Angeles by Department of Defense and National Security Industrial Association.

Attending from GD/Convair will be President J. H. Famme and H. P. Williams, manager of value control.

E. D. Heller, value control manager at GD/Astro will also attend, along with a representative of each major GD/Astro function.

The one-day program and panel discussions will deal primarily with value engineering requirements for improvement of defense procurement and reduction of logistics costs.

Contract Increased For BuShips Radios

General Dynamics / Electronics —Rochester has received an addition of nearly $500,000 to its recent award of more than $4 million for single sideband radio equipment from the U.S. Navy Bureau of Ships. **(General Dynamics NEWS,** Aug. 7.)

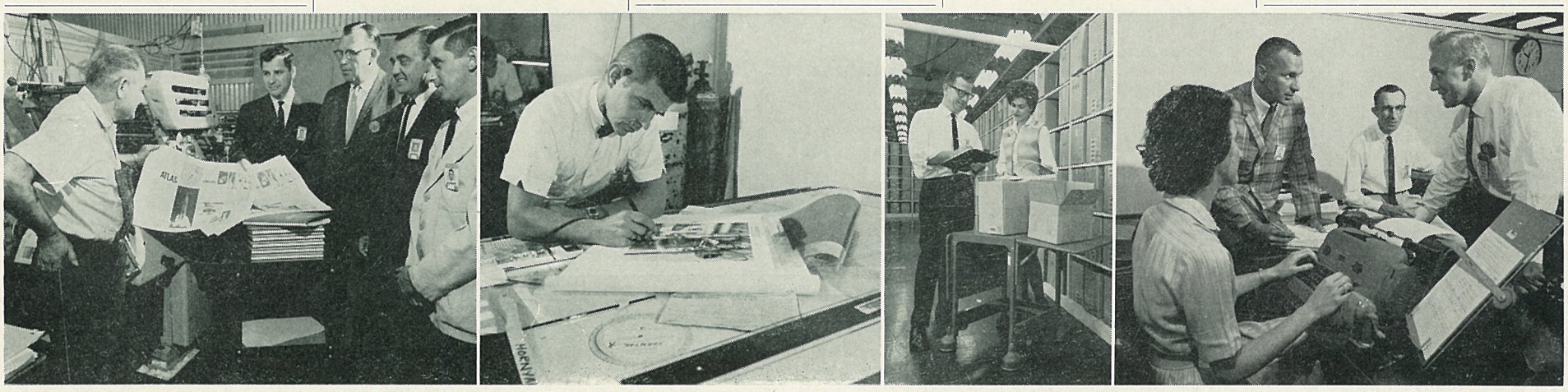
The current supplement to the original contract awarded in June is for an additional quantity of radio receivers of a special design. Initial contract called for production of more than 300 sets of the AN/WRC-1 transceiver, and more than 1,000 separate R-1051/URR receivers.

The service-approved receivers are for general purpose communications to replace those now in use by the military.

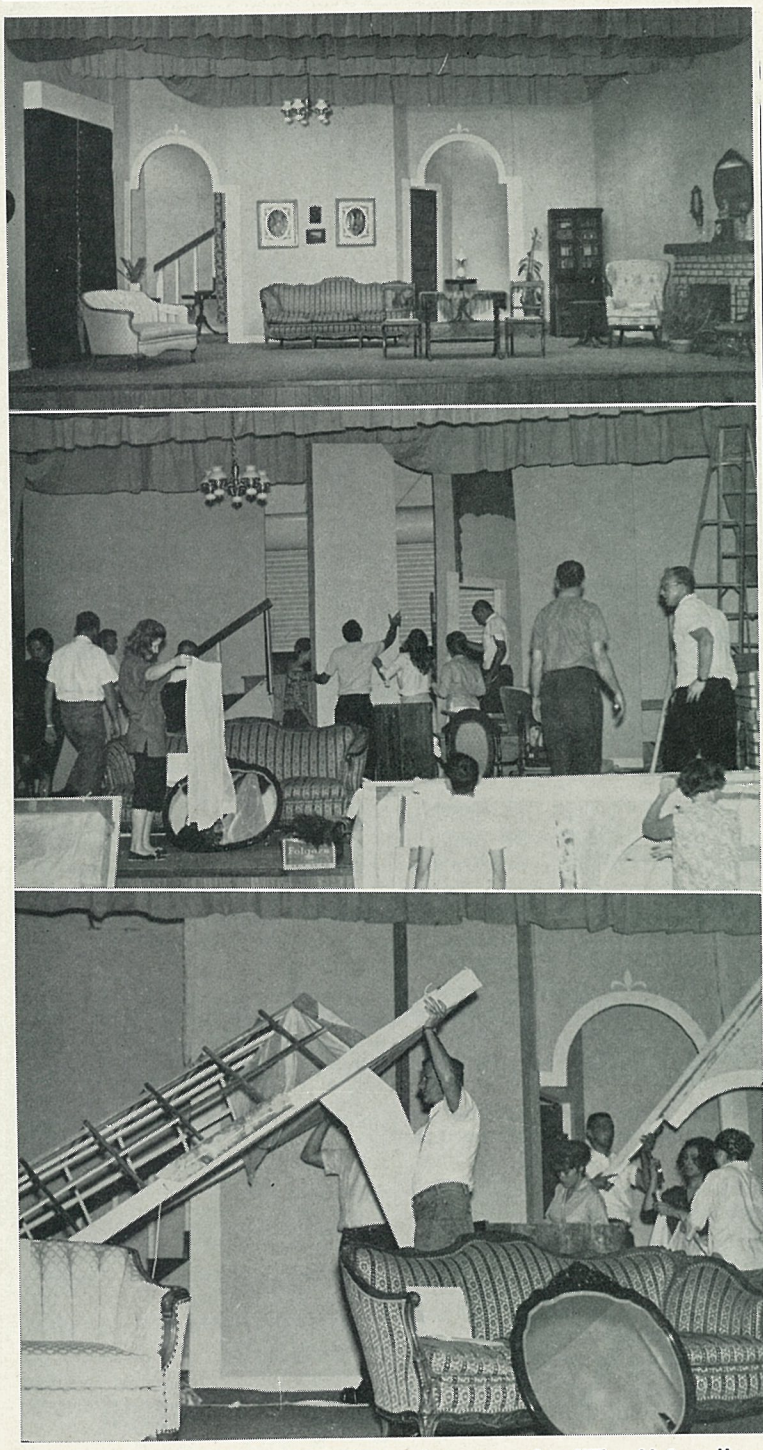
Sutherland on Tour Of Duty at Groton

Robert E. Sutherland, veteran GD/Astronautics salary administrator in industrial relations department, has reported to General Dynamics/Electric Boat for a special 30-to-60-day assignment.

Sutherland will work with Elmer R. Johnson, GD/Electric Boat's director of industrial relations, in coordinating policy matters in compensation and salary administration.



PUBLISHERS — Technical manual preparation is big task for GD/Astronautics. At right is typical planning conference, with Jean Fortier, reproduction typist, Ray Dubois, engineering writer, O. B. Zimmerman, illustrator, Arthur Templin, technical editor, making decisions. Second from left, Jerry Hornyak, illustrator, prepares art work, which is important part of operation. At far left, in GD/Convair printing shop are Joe Somadge, GD/Convair Dept. 16, Leonard Aquillard, Astro technical publications, Herb B. Day, GD/Convair graphic reproduction supervisor, Dick Decker, Astro purchasing, R. M. Young, Astro communication representative. Stockpiling copies of publications is another aspect. Second from right, Walt Brees, reliability control, and Nancy Sawyer, Dept. 315 clerk, check updating.



COMING DOWN — Top photo shows set for "The Heiress" as audience saw it over three weekends. Last performance ended at 11:30 p.m. Aug. 24 and at 11:35 stage (center and lower photos) became scene of frantic activity as cast pitched in to dismantle. — Photos by Pat Givens.

Cast and Backstage Crew 'Strike' Minutes After Performance Ends

When the final curtain rang down last month on a seven-performance run of "The Heiress," Astro Players' most recent offering, the group began to "strike" —scenery, that is.

The expression is pure theater. It refers to shattering an illusion: stripping away the sets, scenery, on-stage decor which, in the course of the "Heiress" run, enabled Astro Players to transport those who attended from San Diego of the present to New York of the 1850s.

When the final show ended at 11 p.m., Aug. 24, the entire crew turned-to on the strike. By the time on-stage players had removed make-up and the job was organized, it was after 11:30.

The job was finished by 1 o'clock. And although the theater buffs were "beat," some went out to celebrate. Others simply went home. For all, "The Heiress" was successfully closed.

Gas Dynamics Class Convenes

A 20-week course in "Elements of Gas Dynamics" is being offered to GD/Astro engineers, mathematicians and physicists under auspices of educational services (Dept. 130-3).

First class was held yesterday (Sept. 17), 5-7 p.m. in the space science conference room, Plant 71, and will continue with meetings each Tuesday and Thursday through Feb. 6. Next session is tomorrow (Sept. 19).

The course, conducted by Dr. Jan Rosciszewski, will cover fundamental equations of gas dynamics, shock tube applications, internal combustion motors, airfoils and advanced propulsion devices.

Prospective students holding bachelor's degrees in engineering, physics or mathematics may contact Laura, ext. 1935, Plant 71, to register.

Salvage Schedule Set For Saturdays

Salvage yard schedule for the next four Saturdays at GD/Convair and GD/Astro sites is:

GD/Astro—Sept. 21, Oct. 5.
GD/Convair—Sept. 28, Oct. 12.

Toastmasters Club Chooses Officers

An Astro slate of officers will head Dynamics Toastmasters Club 457 after recent election for the coming term.

Ken Jamrus was chosen president of the General Dynamics men's speaking group. Ray Kalanquin is educational vice president; John Griffith, administrative vice president; Harry Nisbet, secretary; Gil Siegmund, treasurer; and Chuck O'Carroll, sergeant at arms.

Meetings are held each Thursday at 6 p.m. in the Convair executive dining room.

Commodities Study Group to Convene

An organizational meeting of a Commodities Study Group being considered for ARA sponsorship will be held Sept. 24 at 7:30 p.m. in ARA Clubhouse.

The group's purpose is to study both fundamental and technical aspects of the commodity market. Guest at the initial meeting will be Bethel Buckalew, manager of a La Jolla firm dealing exclusively in commodities.

Additional information is available from Joe Maguire, ext. 843.

Naval Reserve Classes Begin

Naval Reserve officers among General Dynamics employees in the San Diego area have two remaining opportunities to enroll in Naval Reserve Officers' School (NROS 11-1) for the fall term.

New students will be accepted at sessions at 7:30 p.m. tomorrow (Sept. 19) and Sept. 26 at Naval Reserve Training Center, Harbor Dr. and Lowell, and at other county locations.

R. A. Evans, manager of personnel administration at GD/Astronautics, a reserve commander, is the school's executive officer, and six other General Dynamics men fill instructors' billets.

John H. Johnson (LCdr., USNR), GD/Astro director of management systems, will teach a course in industrial management; Harry S. McCool (Lt.), GD/Astro Dept. 140-1, will teach anti-submarine warfare (ASW); and George T. Schnurer (Lt.), of General Atomic, will instruct ABC warfare defense.

R. G. Stoklosa (LCdr.) of GD/Astro Dept. 662-7, will handle guided missile orientation, and Emory W. Thurston (LCdr.) of Dept. 130-3 will teach leadership. R. G. Wilson (Cdr.) of Dept. 196-0 also instructs.

Courses in a dozen subjects will be offered at the San Diego location with other classes meeting at Palomar College, San Marcos (Tuesdays); Grossmont High School (Wednesdays); Hilltop High School (Wednesdays); Coronado Amphibious Base (Thursdays).

Additional information on the NROS program is available from USNRTC, 222-6411, ext. 387.

Game Contest Runs to Dec.

Big game hunters from General Dynamics will be shooting for big prizes in CRA-ARA Gun Club's annual contest which opens this week and runs until December.

All GD/Convair, GD/Electronics, and GD/Astro people and their families are urged to enter their big game on forms now available at all employee services and industrial relations outlets.

Any type of larger game animals bagged makes the entry eligible in the drawing to climax the contest at the December Gun Club meeting at Gillespie Field.

First prize winner will get a 4 hp air-cooled outboard motor. Runner-up will receive a tape recorder. CRA Commissioner Jack Swank said that there will be a variety of other prizes, depending on number of entries.

DYNAMICS DRIVERS ENTERED IN RACES

A GD/Electronics man will be vying for top spot in the coming National Inboard Championships which will draw a field of expert racers from all over the country to San Diego this weekend.

Paul Bequette, GD/E production engineer, who holds national highpoint standing in his class, will be racing his 145-cubic-inch hydroplane all three days of the regatta, Sept. 20-22, over the Mission Bay course. His hydroplane is designated by the number 2S.

Also entered in the same class is George Shields of Astro. His boat is No. 22S.

Sponsoring the event is the American Power Boat Association, of which the Pacific Power Boat Club is affiliated. Local contestants are members of the club with Bill Hessing, also of GD/E, commodore.

CRA Stamp Club's Meetings Resumed

CRA Stamp Club will resume its monthly meetings next month after the summer vacation period, reports Commissioner Jack Benedict.

Members will meet Thursday (Oct. 3) at 7:30 p.m. in the Convair executive dining room.

First Ground School Session Will Be Tomorrow at Lindbergh

First session of the CRA-sponsored ground school course will be tomorrow night (Sept. 19) at 7:30 p.m. at Jim's Air Service, Lindbergh Field.

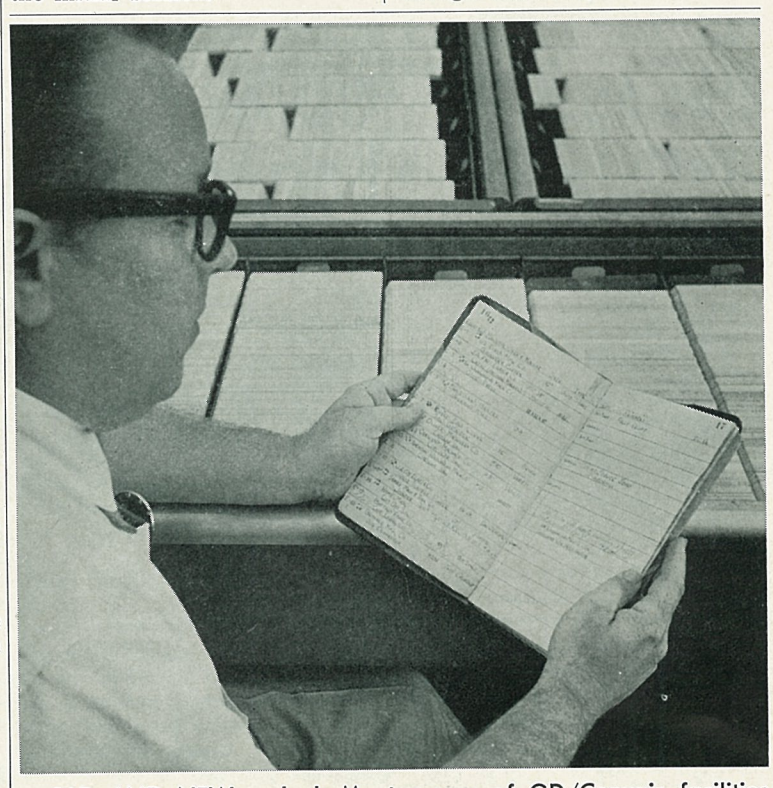
Harold Ayer, president of CRA Solo Flyers which is sponsoring the instruction for all General Dynamics would-be pilots, said that tomorrow's meeting will be for organization and orientation. First actual class will be next week, Sept. 26.

All persons already signed for the course which will prepare students for private pilot's licenses are urged to attend. Others may still enroll by attending the initial session.

Jim's Air Service at 2440 Stillwater Road, north end of Lindbergh Field, may be reached by turning off of Harbor Drive onto Winship Lane.

A professional ground school instructor, Ian Lansdown, has been engaged to teach the 14-week course which covers physical requirements, student permits, pre-flight checks, traffic patterns, theory of flight, navigation, meteorology. At completion, students should be prepared to pass their FAA examinations for private pilot's licenses.

Ayer will give additional information if he is contacted through ext. 2678, Plant 1.



OLD AND NEW — Jack Montgomery of GD/Convair facilities control holds 1935 ledger listing company equipment with present recording system of some 100,000 tab cards stretching into background.

Aging Ledger, Legacy of Past, Holds History of Machinery

A battered little grey ledger, held together with yellowed scotch tape, itemizing all Consolidated Aircraft equipment brought to San Diego in the 1935 move, still plays an important part in GD/Convair's control of capital equipment items.

Since the first hand-printed listing of the 900 pieces of machinery, tools, desks, chairs, typewriters moved from Buffalo, N. Y., at least 140,000 separate items of equipment have been acquired and tabulated, said Jack Montgomery, facilities control analyst in charge of maintaining location records.

Every piece of equipment belonging to the company has its own personal record—ID number, make, model, serial number, description of attachments and accessories—and most important of all, just where it is and what department is using it at any given time.

Whenever department or function numbers are changed or sections relocated, new records must be made for each item. And, when equipment is no longer needed and sent to salvage, sold or discarded, departments must be relieved of their responsibility and records changed.

A continuing audit is made by property accounting to see that all equipment is where it is supposed to be and that correct information is available at all times for adjustment of records.

Even history of the first items listed in the old 1935 "Machinery Records" ledger can be traced through the years. For instance, item E-365, a slip roll former, purchased in 1927, is now charged to Dept. 131 for use at the seaplane ramp. An arbor press, acquired in 1925, bearing the number E-567, is used by Dept. 14 at Rose Canyon. Another arbor press of the same vintage went with the four freight carloads and one vanload of equipment to Electro Dynamic to replace burned out equipment.

No. E-1, first entry in the ledger, was a grinder and buffer, disposed of some years ago.

Until 1955, when the IBM tab card system was put into effect, all records were manually posted in ledgers. Now cards are key punched within the facilities control section from information on acquisition reports, tagger reports, data sheets from property accounting.

A conversion to tape is planned this fall. Then, data processing will produce updated monthly listings, combining property accounting and facilities control records. The tab sheets will replace the IBM card file for easier maintenance of records.

Instrument Society To Meet Tomorrow

First fall meeting of the San Diego Section of the Instrument Society of America will be tomorrow (Sept. 19) at the U.S. Grant Hotel.

General Dynamics members will hear Dr. David C. Kalbfell, president of Instruments, Inc., talk on "Magnetic Amplifiers." Dr. Kalbfell is founder of the firm known as Kin-Tel and a lecturer in physics at San Diego State College.

W. R. Holmes of GD/Convair's standards laboratory will chair the meeting as new president of the San Diego Section. Other GD men on the executive board are Martin Kantor of General Atomic; Charles Hill, Leon Schenke, and Harry Norton, all of GD/Astro; and Dick Barnett of GD/Electronics.

For reservations for the 7 p.m. dinner meeting in the Georgian Room call 298-8331, ext. 23. Social hour will be at 6:30 in the Parisian Room.

Odd Ash Trays From 48 States Featured in Novel Collection

"Push a button, light a light, find your state" is the gimmick that attracts crowds to the unique ash tray collection of Gordon Needles, GD/Convair Dept. 42-3, wherever it is shown.

The eye-catching arrangement of commercial advertising ash trays from every part of the world has won three blue ribbons in San Diego hobby shows, the latest at the 1963 San Diego County Fair.

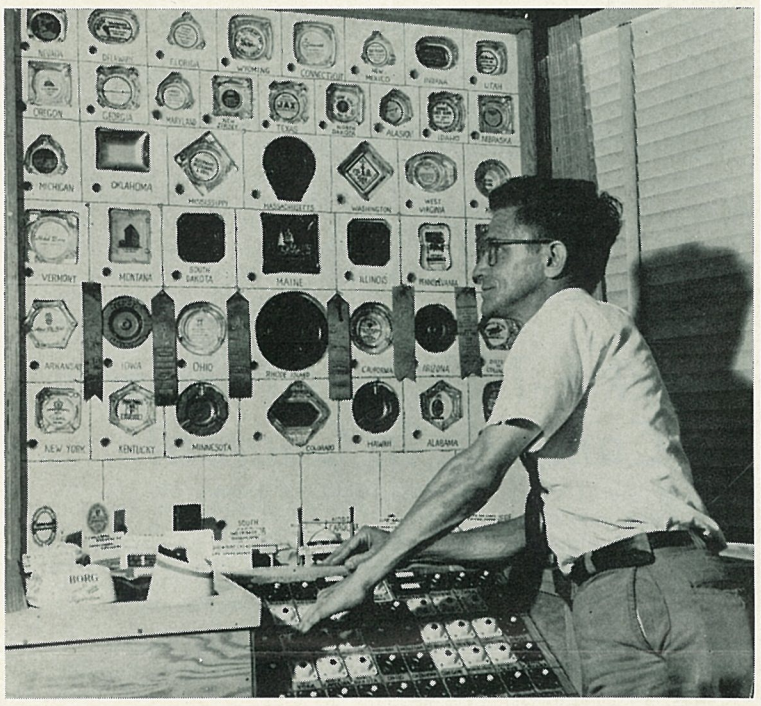
Built by Needles himself, the display console does everything but ring bells. Little light bulbs flash on to point up a particular state when the corresponding button is pressed on the panel.

Forty-eight states (North Carolina and New Hampshire are missing) and 22 countries are identified with an unusual ash tray advertising specific products or industries. One, that from Oklahoma, was made of gold anodized aluminum especially for Needles' collection.

Although he's often been pointed out as "the man whose hobby is 'stealing' ash trays," Needles says he really doesn't need to with friends and companies all over the world eager to help him complete the collection.

His display board can hold only a small part of the 800 ash trays that have been given him in the eight years he has been gathering them. He writes to tourist bureaus, steamship lines, Chambers of Commerce, various companies; searches through rummage sales, Goodwill and Salvation Army outlets.

Probably the oldest one is a rubber tire tray advertising the Cooper Tire Co., Ohio, which belonged to Needles' grandmother. Another old-timer is a pot hanging on a tripod from the 1933 Century of Progress, Chicago, Ill. Largest came from the smallest state—Rhode Island, and smallest from the now-largest state of Alaska.



"JACKPOT"—Gordon Needles, GD/Convair, lights up state of Michigan as he presses switch on his prize-winning ash tray display console.



CHAMPIONS — GD/Electronics Material Control ball club, winner of CRA plant softball tourney, lines up after defeating GD/E Purchasing in play-off series. Standing (from left) are Huey Crawford, Marvin Oliver, Stan Stewart, Fred Matson, Bruce Allen, John Graves, Bob Warner, Bill Miale, Pete Beyrer of CRA, umpire, Pete Goetz, manager. Kneeling, left to right, are Keith Cooke, Ken Farnsworth, John Riddle, Tom Morris, Fred Hamlin, Dave Zatarian. Trophies were handed out at Sept. 7 barbecue in Pecan Park.

Deadline Set For Net Meet

Deadline date to sign for the annual IRC tennis championships is next Monday (Sept. 23).

General Dynamics tennis players may get entry forms at GD/Convair employee services, ext. 1245, Plant 1, said Pete Beyrer of CRA.

Tourney dates are Sept. 28-29, Oct. 5-6 at Morley Field in Balboa Park.

CRA will share the entry cost for Convair and Electronics and Astro (Plant 1) contestants. They will be required to pay only half of the $3 for singles or $4 per team for doubles.

Awards will go to winners and runners-up in singles and doubles events and to winner of consolation singles.

Entry blanks must be mailed with fees to the Sports Office, Park and Recreation Dept., Balboa Park.

NATIONAL ARCHERY CHAMP BAGS BUCKS

Bob Lorch, ace bowman and long-time member of CRA's Archery Club, scored a couple of bull's-eyes to bring home big game from his annual hunting trip to Utah this month.

Lorch (Dept. 401) bagged a 150-lb. four-point buck, and a 110-lb. forked-horn, using his Browning fiber glass and wood laminated bow and metal shaft arrows. This is the third year in a row that Lorch has downed bucks in Utah, and makes eight bucks altogether that he has bagged with his bow and arrow since he took up the weapon in 1954.

He holds the Men's National Field Championship title from results of the national meet near Big Bear this year.

Baseball Team Will Work Out

First workout for a CRA-sponsored baseball team to be entered in this season's Industrial League will be this Sunday (Sept. 22) at 10 a.m. on Golden Hill Playground, 27th and Ash Sts.

All GD/Convair and GD/Electronics players, or members of their families, who wish to try out are urged to report to the field either for this Sunday's workout or the second, Sept. 29.

Pete Beyrer, manager, said that the first practice game will be Oct. 6 with the league opener on Oct. 13. Games will be played each Sunday throughout the season which probably will extend into February.

The CRA team will compete with the other 7 or 8 company teams already signed for league play. Last year the CRA entry came in second in final standings.

Mrs. Peterson Wins Top Fishing Prize

Mrs. Gunnard Peterson won the $10 cash prize for top fish in CRA Fishing Club's July contest.

The 12-lb. corvina she hooked at Desert Shores on Salton Sea on one of her first angling attempts was good for the award.

August's contest was won by Joe Sopko, retired from Dept. 25, who got $10 for a 28-lb. Chinook salmon taken from Klamath River, Ore.

Commissioner Bob Menzie urges all fishermen to turn in their best catches each month to employee services. Any others reported during July and August would have been winners, he said, as second prizes went begging.

Next meeting of the Fishing Club will be Oct. 15 at Gillespie Field Clubhouse.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Flying sessions Saturday and Sunday morning, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BASEBALL — First workouts for Industrial League team Sept. 22 and 29, 10 a.m., Golden Hill playground, 27th and Ash.

BOWLING — Openings still available in winter leagues. Call Jim Hayman, home phone, 466-1262, or Mike Brooks, home phone, 469-8793.

BRIDGE CLUB—Play every Wednesday evening, 7:30 p.m. Convair executive dining room, Pacific Hwy. Master Points night Sept. 25.

COIN CLUB — Meeting Sept. 19, 7:30 p.m., Convair executive dining room, Pacific Hwy.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GOLF — Entries open Sept. 19-Oct. 4 for Plant Championships, Oct. 19, 26, Nov. 2, Carlton Oaks Country Club. Call ext. 1705, Plant 1.

GUN CLUB—Enter big game bags for annual drawing at all GD employee services outlets.

ICE SKATING — Big Bear weekend Sept. 20-22. Regular Thursday ice skating sessions at Mission Valley Ice Plaza 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children, 25¢.

PISTOL CLUB—Regular shoot Sunday (Sept. 22), 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Sept. 19), 8 p.m., Harbor Drive headquarters.

ROCKHOUNDS — Rockhound lapidary shop at Gillespie Field open Wednesday evenings for instruction.

SOLO FLYERS — Organizational meeting of ground school course tomorrow (Sept. 19), 7:30 p.m., Jim's Air Service.

STAMP CLUB — Meeting Oct. 3, 7:30 p.m., Convair executive dining room.

TENNIS — Entries close Sept. 23 for IRC tennis tourney Sept. 28-29, Oct. 5-6, Morley Field. Forms at GD/Convair employee services.

WATER SKI CLUB — Weekend skiing on phone call basis. Call Gene Sevigny, ext. 1355, or Jack Loos, ext. 2456, both Plant 1.

Sports & Recreation

CRA Plant Championship Golf Tournament Sign-ups to Start

Sign-ups for the annual CRA Plant Golf Championship tourney start tomorrow (Sept. 19), announces Commissioner Ken Wulfemeyer.

GD/Convair and GD/Electronics linksmen who qualify may phone ext. 1705, Plant 1, for entries until Oct. 4.

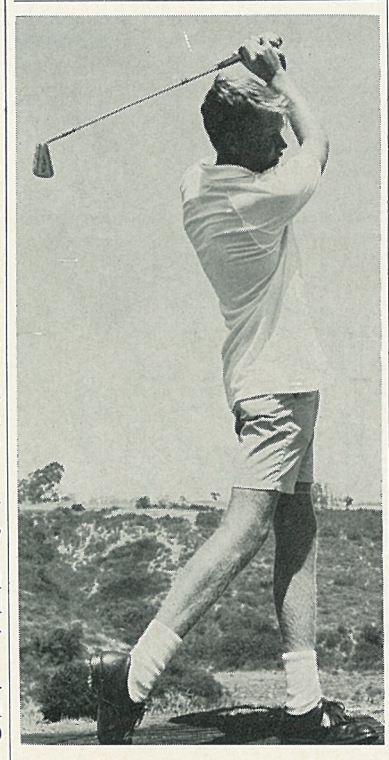
The plant championship match play is set for three Sundays, Oct. 19, 26, Nov. 2, at Carlton Oaks Country Club course.

Entrants must have current established handicaps and must have participated in at least three CRA tournaments since the first of this year.

Entry fee is $5. This includes greens fees for the first match, which will be forfeited if the player does not take part in the opening round. Entrants will pay their own fees for subsequent rounds. Entry fees must be paid to Wulfemeyer by Oct. 4.

The tournament will be organized for match play by handicap flights, said Wulfemeyer.

Last year's tourney winner was Frank Sisson of Dept. 6, who took the championship flight finals 1-up over Mel Doerr of Dept. 133.



CLOSE WIN — Logan B. Jenkins, 15, son of *General Dynamics NEWS* editor Logan H. Jenkins, last month won San Diego County Junior Medal Play Golf Championship after finishing 72 holes tied at 285 (three under par for Balboa Park course) with John Schroeder, 17, son of GD/Astro's Ted Schroeder. Young Jenkins won with birdie on second extra hole of playoff.

Girl Golfers Begin Play

Fledgling linkswomen of GD Women's Golf Club spread their wings a little to get their first taste of tourney play over Mission taste of tourney play over Mismonth.

Six threesomes teed off for the 18-hole meet Sept. 7, first in a series of monthly tournaments planned for the beginning golfers. Peggy Tracy, tournament chairman, said that the initial match helped give the girls an idea of tournament play and rules of the game.

Jo Ann Kranz of GD/E came in with low score, Margaret Clark of GD/Convair was second, Mary Ransom of GD/E and Danni Carlton of GD/Convair tied for third, and Emma Webb of GD/E was fourth. First-place winner won a golf glove and the others, golf balls.

Next tourney has been set for Oct. 5. In the meantime, members will practice every Tuesday and Thursday evening at the Mission Bay course's driving range under tutelage of Ernie Paul.

An open invitation is out to all General Dynamics women to take advantage of the free instruction and practice matches. Contact Emma Webb, ext. 1142, or Juanita Tilaro, ext. 1974, both GD/E Plant 1, for information.

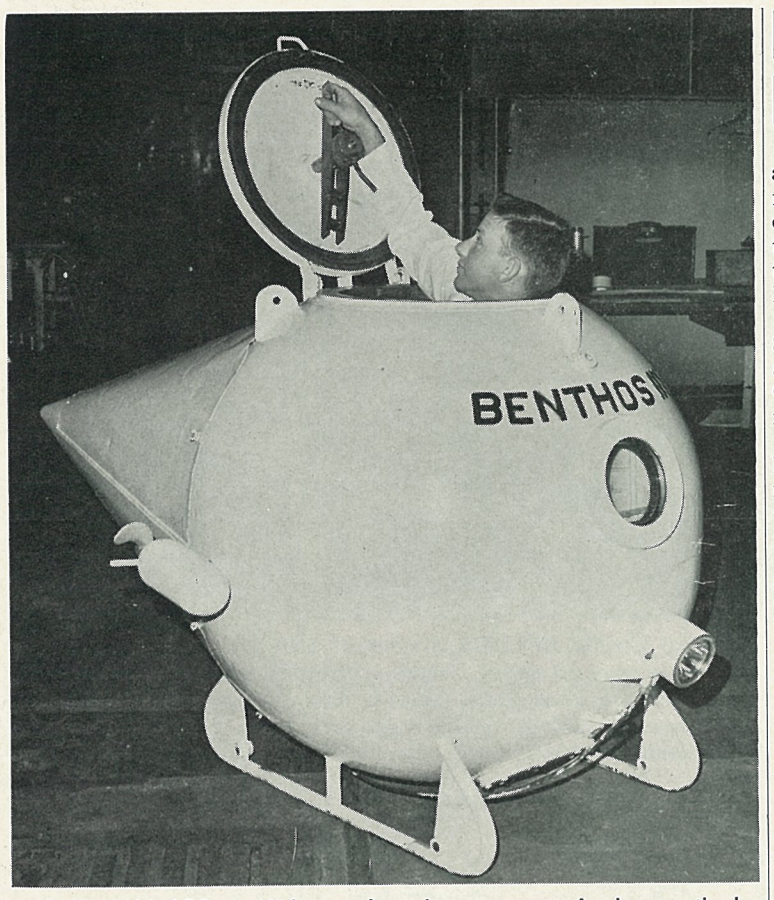
Those intending to take part in tournament play should contact Peggy Tracy, ext. 2641, and turn in established handicaps before tourney dates.

Williamson Again Wins in Shooting

CRA Pistol Club Commissioner Joe Williamson continues to take first spot in club matches, winning both the .22-cal. Police Course and .45-cal. Short National at the Sept. 8 meet.

However, he was pushed hard by Vern Mardis who came within a point of the 291 winning score in the Police event. Williamson's 267 was good for top honors in the Short National.

W. G. Walker, with 286, and Jim Halfacre, 284, stood in third and fourth places in Police Course competition and switched standings in the Short National. Halfacre was second-high with 257 and Walker, third with 233.



ONE-MAN JOB — Midget submarine was acquired recently by Electric Boat division for research work. Inspecting device is EB's Ray Grady, test technician. It is powered by two battery-driven electric motors. Craft will dive to 300 feet, has speed of three knots.

Gen. Power Recommends More Hustlers For AF

Gen. Thomas S. Power has called the B-58 "one of the finest weapon systems in the world today" and said he would "like to see it put back in production."

The commander of Strategic Air Command made the statement in testimony before the Preparedness Investigating Subcommittee of the Committee on Armed Services in Washington, Aug. 19, and later made public by the committee.

General Power said he had submitted suggestions "down through the whole spectrum" concerning manned bombers.

"I have particularly asked for B-58s," the SAC commander said. "We have had it in the inventory for three years. We have had problems . . . but it was a big step forward in performance.

"We have more than doubled the speed of our bombers. We bought and paid for it and had three years of struggling to make it reliable. It is a reliable weapon system today, and I would like to see it put back into production.

"We have already bought and paid for the tools and all the know-how. We will have a proven weapon system. We can get that within two years," General Power testified.

The B-58 had its first flight Nov. 11, 1956, and became operational Aug. 1, 1960.

Today, two wings of Mach 2 Hustlers form the core of SAC's supersonic nuclear retaliatory prowess. They are the 43rd Bomb Wing at Carswell AFB, Fort Worth, and the 305th Bomb Wing at Bunker Hill AFB, Peru, Ind.

As the free world's only operational double sonic bomber, the B-58 has posted 14 world speed and performance records. In the process, B-58 crews have earned virtually every major aviation award, including: Thompson Trophy, Mackay Trophy (twice), Harmon Trophy, Bendix Trophy, and Bleriot Trophy.

On Oct. 26, 1962, Air Force accepted the final production B-58 to come off the assembly line. All combat Hustlers are now being cycled through a modernization program to bring them up to latest configuration.



"Oh, THERE you are! How long have you been home?"

Radio Contract For F-111 Let

Collins Radio Co. has been awarded contracts for development and production of high frequency radio equipment and antenna couplers for the F-111 tactical fighter for both the Air Force and the Navy.

The contracts, totaling about $2.3 million, are for development and initial production of 23 units. General Dynamics contract calls for 23 test aircraft.

Collins HF radios will provide long-range, "highly reliable" communication. The antenna couplers will permit automatic loading and tuning of antennas.

Top speed of the bi-service plane will be about two-and-one-half times the speed of sound. It is to be used as a long-endurance, and low-altitude weapon system (capable of flying anywhere in the world in one day) as well as a low-level penetration fighter.

Versatility of the F-111 is embodied in its variable-sweep wing, which will extend and retract during different phases of flight. This will provide maximum effectiveness throughout the speed range of the fighter. Short take-off and landing from rough airfields and carrier decks are added features.

* * *

BENDIX TO BUILD F-111 ACTUATORS

A contract to design, develop and manufacture the primary flight surface control servo actuators for the F-111 jet aircraft has been awarded to Bendix-Pacific division of Bendix Corp.

The contract, totaling $750,000, covers development of lightweight integrally packaged tandem actuators and valves to provide actuation and control of the rudder and horizontal tail flight surfaces for both the Air Force and Navy test versions of the aircraft.

David H. Brown, general manager of Bendix-Pacific, said the horizontal tail servo actuators will provide an output of force equal to 70 tons but will require only two ounces of input force to activate them.

Bendix-Pacific has been a major supplier on another of GD/Fort Worth programs, having supplied more than $20 million in hydraulic control systems for B-58 jet bomber.

Division Communicators Will Confer on Costs

General Dynamics communications experts from various divisions will meet in New York City next week to consider methods of reducing wire communications costs throughout the entire Corporation.

Roger Lewis, General Dynamics president, will open the meeting.

R. E. Bennis, Corporate telephone and wire coordinator, said, in calling the meeting, that with total Corporate communications expense in the millions, "control of these costs and assurance that maximum economies are being obtained is a matter of direct concern to each division."

One of the prime purposes of the Sept. 24-27 gathering will be to develop a closer working relationship among the communications people in the various divisions and to lay the groundwork for standards and procedures to obtain the most efficient service at the least possible outlay.

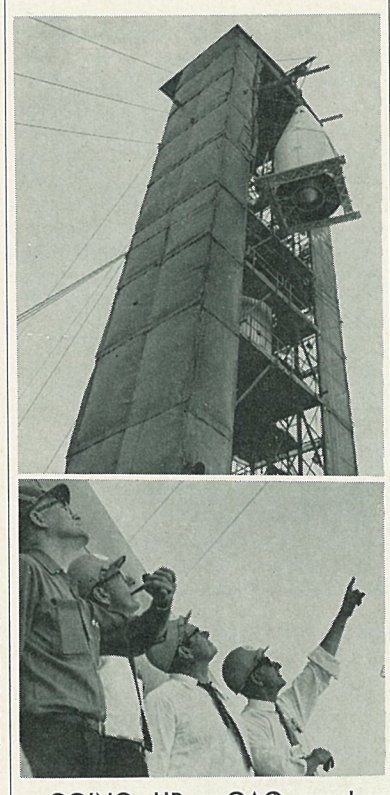
Attending will be R. I. Morse of San Diego; Richard Farr from the GD Washington Office, and the following divisional representatives: Harry Lynas and Gordon Gillespie, Canadair Limited; Robert W. Sparkes and William Hastings, Stromberg-Carlson; Vincent C. Lariton and Leonard Solarek of GD/Electronics-Rochester; J. H. Bray and William Hall of Electric Boat; James Walsh of Material Service; Ted Kukowski, Electro Dynamic; M. B. Gross and John Howell, GD/Fort Worth; R. H. Williams, GD/Convair; R. W. Kleinhans, GD/Astronautics; J. F. Dacolias and J. B. Gosma, GD/Pomona; and J. C. Stowers, General Atomic.

GD/FW Health Physics Exhibit on Display

A GD/Fort Worth-sponsored photo-panel depicting the function of health physics is featured in the 1963 Tarrant County Medical Society Health Fair at Will Rogers Coliseum this week.

Orbiting Observatory Mockup Checks Units

Milestone in NASA's Orbiting Astronomical Observatory (OAO) program was reached last week with erection of a spacecraft mockup with actual nose fairing, second stage and interstage adapter at GD/Astronautics' Point Loma Test site.



GOING UP — OAO mockup nears top of Pt. Loma tower at San Diego, watched by GD/Astro men, Harold Schnaubelt, Paul Blair, Charles Shelton and Joe Kayda.

Ultimately, OAO will be launched from Cape Canaveral aboard an Atlas-Agena B combination into a 550-mile high circular orbit about the earth. After jettisoning its nose fairing, the unmanned spacecraft will make telescopic stellar observations, reporting with digital data and television signals.

The Pt. Loma erection marks the start of a three-phase test program. First come match-mate tests to check compatability of various portions of the space vehicle, with additional testing to follow after erection of the Atlas booster (first stage).

Dominating the scene during erection was the all-fiber glass, honeycomb nose fairing built by GD/Fort Worth (**General Dynamics NEWS**, June 12, 1963). This three-story tall cone will protect OAO during ascent.

GD/Astro supplies the Atlas space launch vehicle first stage; Lockheed the Agena B second stage; while the spacecraft itself is built by Grumman.

For operations at Pt. Loma, GD/Astro's Dewey Jones, Dept. 565, is test conductor; Phil Adams, Dept. 565, is test engineer; and engineering support is provided by Dept. 756 personnel directed by Foreman Les Green.

Crack F-102, F-106 Teams To Compete in Combat

Ten of the 14 crack Air Force teams from air defense fighter-interceptor squadrons shooting for top places in William Tell 1963 next month will be flying General Dynamics/Convair fighter interceptors.

Four of the teams, all representing Air Defense Command squadrons, will fly Convair F-106s at the week-long AF World-Wide Fighter Interceptor Weapons Meet starting Oct. 7 at Tyndall AFB, Fla. Six teams will fly F-102s.

The competition is usually held every two years to demonstrate the Air Force fighter-interceptor units as part of the Free World deterrent posture. Planes are placed in three classes according to weapons used. F-102s will compete in Category II; F-106s in Category III. Only other fighter craft entered in the meet are McDonnell F-101Bs in Category I.

F-102 teams have been selected from the 4th FIS, Misawa Air Base, Japan, with Lt. Col. Arnold E. Hector, PACAF, team captain; 59th FIS, Goose Air Base, Labrador, Col. Edward R. Haydon, ADC; 146th FIS, Pittsburgh Municipal Airport, Maj. George C. McRory, Air National Guard; 317th FIS, Elmendorf AFB, Alaska, Lt. Col. Joseph W. Rogers, Alaskan Air Command; 460th FIS, Portland International Airport, Ore., Lt. Col. William W. Maitland, ADC; and 525th FIS, Bitburg Air Base, Germany, Lt. Col. William C. Jackson, USAFE.

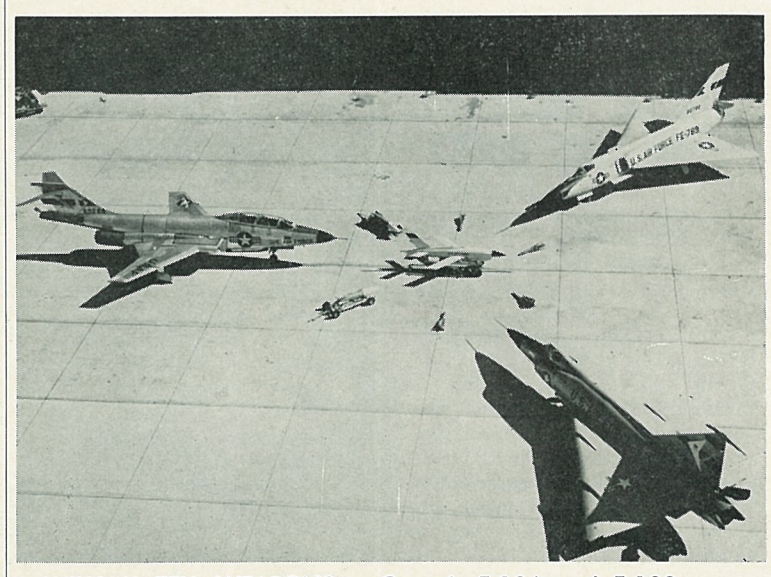
F-106 teams and team captains are from 11th FIS, Duluth Municipal Airport, Minn., Lt. Col. L. W. Kupersmith, 30th Air Division, Truax Field, Wis.; 48th FIS, Langley AFB, Va., Lt. Col. Jimmy J. Jumper, 26th Air. Div., Hancock Field, N.Y.; 318th FIS, McChord AFB, Wash., Lt. Col. Howard S. Askelson, 25th Air Div., McChord AFB; and 456th FIS, Castle AFB, Calif., Lt. Col. John H. Rogers, 28th Air Div., Hamilton AFB, Calif.

Teams will fly missions simulating, as closely as possible, aircraft attack conditions. Using the Hughes Falcon missiles and Douglas Genie rockets, teams will fire at the fast-flying Ryan Firebee Q-2C jet drone target, only one-half the size of the interceptors.

Crews will scramble for their aircraft only after their radar controllers have detected the tiny jet drone flying over the Gulf of Mexico firing range. Teams will be graded on their ability to shoot down the drone at altitudes above 50,000 feet, below 50,000 feet, and on night misions.

This year's competition will feature an intruder mission. The radar controller for the team will be notified that somewhere over the Gulf a drone is coming in. He will have to locate that target on his radar, scramble his interceptor team, and direct them for the "kill."

F-102s first took active part in the weapon meets in 1958 and F-106s for the first time in 1961. In that William Tell competition, pilots from 59th FIS, Goose Bay, scored four perfect 1,000-point missions in F-102 category.



WILLIAM TELL WEAPONS — Convair F-106 and F-102, center and right, and McDonnell F-101B (at left) are pictured pointing toward a Ryan Q-2C jet target drone, simulated enemy in coming Air Force World-Wide Fighter Interceptor Weapons Meet. Air-to-air missiles and rockets carried by craft are clustered around drone.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 20 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, October 2, 1963



HEAD TABLE—Frank Davis, GD/Fort Worth president, spoke to full house at recent GD/Astro Management Club meeting, which featured guests from other divisions. From left: T. F. McCubbin, representing E. D. Bryant, GD/Astro vp-operations; E. G. Hill, GD/Astro controller; W. T. Lake, General Dynamics comptroller; J. L. Lombardo, GE/Electronics-SD general manager; W. H. Patterson, GD/Astro vp-advanced product planning; R. T. Bauman, Astro Management Club president; Davis; W. L. Van Horn, GD/Astro vp and program director-Atlas weapons system; H. Cushman Dow, GD/Astro chief counsel; J. R. Dempsey, GD/Astro president; Dick Wilkens, GD/Convair director of industrial relations; G. L. Hansen, GD/Astro vp and program director-Centaur; E. V. Russell, past president, Astro Management Club.

Rapt Audience Hears Davis Discuss F-111

"If a fellow catches a big fish, he doesn't walk home through the alley."

Thus, Frank W. Davis, General Dynamics/Fort Worth president, explained the topic of his address ("Airplanes — Texas Style") at a meeting of GD/Astronautics Management Club in San Diego recently.

Davis referred, of course, to GD/FW's hard-won contest for the controversial F-111 (TFX) fighter-bomber contract, awarded to the Texas division last November.

It was, Davis noted, "a helluva competition."

The contest was unique because decision for the bi-service F-111 award had to be made at Department of Defense level, and further, since the competition continued into three "sudden-death" play-offs.

"I believe this resulted in a better airplane," Davis said, adding that, "It's pretty hard on the competitors, but I believe we'll see more of this in the future."

Davis traced the history of the division he heads in terms of its aircraft—all of them controversial in early stages of development.

He called the B-36 (mammoth intercontinental bomber which experts of the day termed "impossible to build") the airplane which put GD/FW "on its own two feet."

The B-58 Hustler—now one of the world's most honored aircraft—came next. It too, Davis said, was controversial, with experts predicting it would miss its calculated altitude, speed and performance by up to 30 per cent.

"It didn't," he noted. "And significantly, it put GD/FW in the business of designing a complete weapon system: experience of immeasurable aid in the F-111 competition."

(Tremendous B-58 capabilities and the honors heaped upon the plane were illustrated in an in-house premiere showing of the film "Champion of Champions" narrated by Jimmy Stewart.)

Moving to the subject of F-111, Davis pointed out that the variable-wing aircraft has now had some 9,000-hours of wind-tunnel testing—twice as much as the

(Continued on Page 5)

Pick Your Favorite and Ballot In 'Miss Torch' Beauty Contest

GD/Convair's fire department will kick off a double-barreled contest today (Oct. 2).

First, everyone at GD/Convair and GD/Electronics has a chance to vote for one of the five beauties chosen by the fire department as candidates for "Miss Torch" of 1963.

Winner will reign during National Fire Prevention Week, Oct. 6-13.

Second, and most important though less glamorous, the department will begin its rounds of all areas in both divisions to see just how much employees know about fire safety rules.

Results of both contests will be known by next Monday, Oct. 7.

The girl receiving most votes in the queen contest will get a trophy for herself and also have the honor of presenting the perpetual trophy to winning department in the safety contest.

Candidates are: Juliet Allen of GD/E Plant 2; Wanda Rose, GD/E Plant 1; Bette Jean "B. J." Shelton, Dept. 6; Marilyn Sorcinelli, Dept. 171; Crystal Wright, Dept. 27.

Every employee is eligible to vote. Marked ballots must be mailed or turned in to the fire department, Zone 3-10, Plant 1, before the Oct. 7 deadline, said Fire Chief D. D. Dimmitt.

Hugh Rae, fire marshal, will start today to contact every department in both divisions. He will quiz at least 10 per cent of the plants' population. Scores will be based on 10 questions

(Continued on Page 2)

"MISS TORCH" BALLOT

Check name of favorite candidate and mail or take ballot to GD/Convair Fire Dept., Zone 3-10, before Oct. 7.

Juliet Allen, GD/E Plant 2 ☐

Wanda Rose, GD/E Plant 1 ☐

"B. J." Shelton Dept. 6 ☐

Marilyn Sorcinelli Dept. 171 ☐

Crystal Wright Dept. 27 ☐

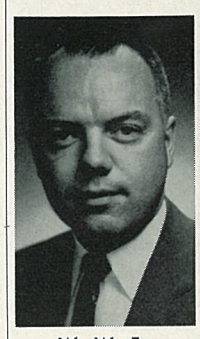
Fox Appointed Eng. Director

William W. Fox, former chief engineer at General Dynamics/Convair, has returned to the division as director of engineering and M. C. Curtis, director of engineering since June, has been appointed Corporate director of program analysis and evaluation.

Curtis will transfer to New York where he reports to R. M. Hatcher, director of operations service for General Dynamics.

Fox reports to C. W. Frick, GD/Convair vice president-engineering.

Fox joined Convair in 1943 as a flight test engineer and held a succession of important posts



W. W. Fox



M. C. Curtis

in engineering until his appointment as chief engineer in 1959. He left the company in 1961 and has been an engineering consultant in the interval. During his years with Convair he was closely associated with the development of the Convair-Liner series, the

(Continued on Page 2)

First Garuda 990A Arrives At Djakarta

As Garuda Indonesian Airways flew away its first Convair 990A two weeks ago, a second group of pilots and flight engineers were headed to San Diego to start flight training for the next delivery.

Garuda's first 990A jetliner lifted from the San Diego flight line at 10:30 the morning of Sept. 18 and put down at Djakarta right on time for welcoming ceremonies at 5 p.m. (Indonesian time) Sept. 20.

Accompanying the plane were pilots and flight engineers who had been at GD/Convair since late July for flight training. Captain Partono, Garuda's president, headed the first flight crew and piloted the craft into Djakarta. Other pilots were Sumedi Amir, R. M. Sjafei, and Susatyo, Department of Civil Aviation. Flight engineers were Azwar Apin and Artijoso.

GD/Convair flight men aboard were Sherman Johnson, pilot, and Ludy Knudsen, flight engineer. They will remain in Indonesia for several months to continue pilot training as planes are transitioned into passenger service.

Second group which began production flight ground school courses at GD/Convair Sept. 23 includes: Soedjalmo, vice president of operations and captain; Soedarmo, vice president of traffic and sales and captain; Abdul Mutalib, chief of flight department and captain; B. J. Slamet and Soerochmat, assistant chief flight engineers; and K. Barkah, DCA director.

They will complete the five-week ground school by the end of October and spend two weeks in pilot training before returning to Djakarta on the second 990A delivery flight the middle of November.

C. J. Falkenthal and J. J. Coil, GD/Convair flight engineer-instructors, who are conducting the training at the San Diego plant, will both go to Indonesia this fall to continue training there. Coil will join Knudsen and Johnson in mid-October as soon as the electronics portion of the current course is completed and Falkenthal will accompany A. P. Wilson, GD/Convair pilot, on the second delivery flight. GD/Convair training personnel will be in Indonesia probably four to six months.

First Garuda 990A will go into actual passenger service shortly after delivery of the second Convair liner.



RECOGNITION — Algie A. Hendrix, General Dynamics vice president-industrial relations, holds plaque honoring participation of Dynamics employees in U.S. Savings Bonds buying by payroll deduction.

Corporation Commended on Bond Buying

General Dynamics Corporation has received a U. S. Department of the Treasury "award for outstanding achievement" in connection with this year's U. S. Savings Bonds campaign throughout the Corporation.

Algie A. Hendrix, Corporate vice president-industrial relations, accepted the award for Roger Lewis, president, in behalf of all General Dynamics employees who are regular purchasers of bonds by payroll deduction.

There now are 37,248 General Dynamics men and women buying bonds by the payroll method.

Hendrix expressed the Corporation's pride that so many employees are participating and commended Convair division for having the highest participation with 71 per cent, followed closely by Astronautics with 70 per cent. Hendrix emphasized General Dynamics' continuing interest in stimulating bonds sales and added:

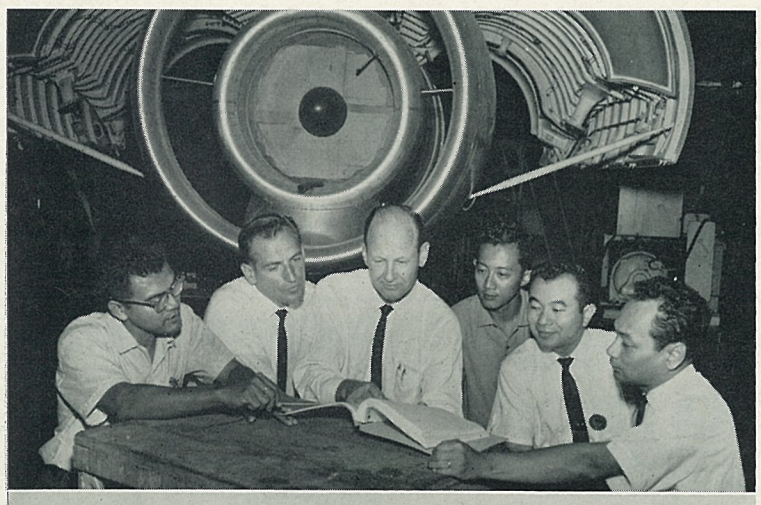
"We encourage each employee to become a regular saver through the payroll deduction plan."

Application forms are available at all divisions and require only a simple signature to put into effect.

The award was presented at a luncheon in New York City.



DAMP FLYAWAY—First Convair 990A delivered to Garuda Indonesian Airways is poised on rain-washed San Diego flight line before takeoff morning of Sept. 18. Route took craft across Pacific via Honolulu, Wake Island, Guam before on-time arrival at Djakarta 5 p.m. (Indonesian time) Sept. 20 with Garuda president, Captain Partono, at controls. GD/Convair crewmen aboard were Sherman Johnson, co-pilot; Ludy Knudsen, flight engineer observer.





INDONESIAN VISITORS—In upper shot Sardjono, Garuda Airways deputy vice president-maintenance and engineering (at far right), is snapped at GD/Convair during trip to finalize maintenance and operations plans before delivery flight of first Convair 990A. Others (from left) are: Sutrisno, DCA chief inspector; Ray Niski and H. W. Balke of GD/Convair; Dudung, Garuda inspector; J. Thetekdjoe, Garuda resident representative. Below is second Garuda flight crew at San Diego plant for ground school and pilot training.

Safety Rules Concentrated In New Manual

A newly-compiled GD/Convair Safety Manual, containing all division safety regulations, national standards for handling and use of hazardous materials, and related technical information, has been released as the division's first documented source of safety information.

Sam Rowland Jr., GD/Convair safety engineer, has been responsible for tying together all pertinent safety information in a single, easily-accessible source.

Until now, there has been no one document containing safety instruction and material on accident prevention, explained M. C. Val Dez, senior safety engineer. Searching through the many regulatory documents and technical booklets was a time-consuming task.

Both Val Dez and J. K. Field, manager of personnel services, pointed out the convenience and value of the new safety manual which, they say, has been received with favor, not only within the division itself, but by NASA and Air Force personnel.

The manual will be updated continuously as information becomes available on the safe handling and use of new and dangerous materials, such as exotic rocket fuels.

Nine Agencies Divide $7,000

Nine San Diego organizations will get a share of $7,000 of GD/Convair Con-Trib-Club funds approved for year-end distribution at last week's Con-Trib committee meeting.

Contributions will go to: Big Brothers of San Diego County, Inc., $500; City Rescue Mission, $500; City of Hope, Duarte, $500; San Diego Mental Health Association, $500; Crossroads Foundation, $500; San Diego County Multiple Sclerosis Society, $500; Young Women's Christian Association, San Diego Branch, $300; El Cajon Branch, $200; San Diego County Association for Retarded Children, San Diego Branch, $1,100; East County Branch, $600; North County Branch, $300; Family Service Association, Homemakers - San Diego, $700; Foothills Branch, $300; San Dieguito Branch, $250; Imperial Beach Branch, $250.

In addition, Sunnyside Residential Care Facilities received $500 to take care of expenses incurred during a recent Disneyland trip for physically and mentally handicapped children.

Fox Appointed New Engineering Director

(Continued from Page 1)

F-102 and F-106 and the 880 and 990. He is a University of Virginia graduate.

Curtis, a graduate of Northern Illinois College, Chicago, Ill., served in the Marine Corps during World War II, joined Convair as a technical analyst in 1951, was recalled to duty as a helicopter pilot during the Korean conflict. He returned to Convair in 1954. He was appointed chief administrative engineer in 1961 and assistant chief engineer-product design in January, 1963.

Navy Reserve Unit Has Billets Open

Naval Reserve Unit 11-1(L), SAM&R Division, has pay billets available for all enlisted rated men or qualified strikers.

The unit meets at the Naval Station Facility, 32nd and Harbor Drive, on the second weekend of the month. This is equivalent to four drills a month, making a total of 48 pay drills a year.

For information contact George Zecca, GD/Convair Plant 1, ext. 1754, or after 5 p.m. at home phone, 277-1878.



TAKE YOUR PICK—Lovelies from GD/Convair and GD/E, vying for "Miss Torch" title, line up for inspection alongside company fire truck (from left): Bette Jean "B.J." Shelton, Dept. 6; Crystal Wright, Dept. 27; Marilyn Sorcinelli, Dept. 171; Wanda Rose, GD/E Plant 1; in driver's seat is Juliet Allen, GD/E Plant 2. Votes must be in to GD/Convair fire department by Oct. 7.

Pick Your Favorite and Ballot In 'Miss Torch' Beauty Contest

(Continued from Page 1)

with 10 points for each correct answer.

Questions are:

1. What is the first thing you do in case of a fire?
2. Where is the nearest alarm box and how do you operate it?
3. Where is the nearest telephone?
4. What extension number do you call to report a fire? What information do you give recipient of the call?
5. After fire department has been notified, what do you do?
6. Where is the nearest fire extinguisher located?
7. What type extinguisher would you use on a trash fire?
8. What type extinguisher would you use on a flammable liquid or electrical fire?
9. How do you operate a soda and acid extinguisher?
10. How can you help prevent fires in your area?

During Fire Prevention Week the fire department will pass out illustrated bulletins on basic safety rules and use of different types of fire extinguishers. The folders, prepared by the GD/Convair department, will be handed out at Gates 2, 5, 10 at Plant 1.

Also, Fire Chief Dimmitt said that the department will put on demonstrations showing proper handling of fire extinguishers at the request of any supervisor in the two divisions.

"There is nothing more important than the prevention of fire," said Stan Sharp, manager of industrial security. "Considering that we have had no fire loss in this plant during the last two years, we feel that no effort is too great to maintain that record."



READY FOR QUIZ—Hugh Rae, GD/Convair fire marshal (right), questions G. T. Adams and Alejandro Hernandez, Dept. 102 painters, on safety know-how in annual fire prevention contest. Next to Rae is F. M. Baxter, Dept. 102 assistant foreman.

Young Modeler's Tiny Little Joe II Rocket Proves 'Too Good' in Championship Meet

GD/Convair is not the only builder of Little Joe II launch vehicles.

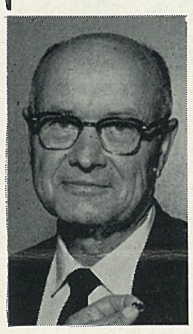
It has an "associate producer" in a young man, Gordon Mandell of Great Neck, N.Y., who has spent months building a Little Joe II model for firing in National Association of Rocketry championships.

J. B. Hurt, Little Joe II program manager at GD/Convair, and his staff have been providing technical advice and encouragement during design and construction of the model.

However, the tiny vehicle, just over three inches long with .77-inch diameter, proved too good in the Aug. 25 competition. Mandell reports that tracking equipment could not get a reading on the high-performance and light weight model, although a visually-estimated altitude of over 1,000 feet was confirmed.

He now is starting to work on a one-inch diameter version of the launch vehicle to bring the altitude down to a level which can be tracked!

Log Book Entries



Harold A. Gibb, Dept. 6-2, GD/Convair, recently received his 30-year service emblem from President J. H. Famme.

Retirements

CONVAIR

ACKERT—Charles M., Dept. 3-1. Seniority date Oct. 3, 1956, retirement effective July 6.

ANSELMO—Andrea, Dept. 101. Seniority date July 7, 1952, retirement effective Aug. 30.

BROACH — Douglas B., Dept. 223. Seniority date March 27, 1952, retirement effective July 30.

BROCKWAY—Hiram C., Dept. 48-52. Seniority date Feb. 27, 1956, retirement effective July 21.

BRODERICK — D. Olive, Dept. 16-7. Seniority date April 26, 1956, retirement effective July 13.

COOKE—Marguerite K., Dept. 97-7. Seniority date Dec. 5, 1947, retirement effective July 12.

CRANE—George H., Dept. 136. Seniority date July 12, 1956, retirement effective July 6.

DAVIS—Helen G., Dept. 171. Seniority date Aug. 22, 1950, retirement effective Aug. 30.

DUNSMORE — Ruby M., Dept. 133. Seniority date July 19, 1951, retirement effective Aug. 9.

ELLISON—William M., Dept. 48-12. Seniority date Aug. 6, 1956, retirement effective July 5.

GREEN—James V., Dept. 31. Seniority date Sept. 1, 1948, retirement effective July 5.

HARRISON — Orville N., Dept. 134. Seniority date Nov. 5, 1953, retirement effective July 20.

HEIN—Frank A., Dept. 140. Seniority date Aug. 25, 1949, retirement effective July 25.

HORTON—Vera B., Dept. 43-1. Seniority date Jan. 14, 1957, retirement effective June 29.

JOHANNSEN—Roger, Dept. 3-1. Seniority date Jan. 28, 1957, retirement effective July 5.

JONES—Albert K., Dept. 21-1. Seniority date Oct. 25, 1950, retirement effective Aug. 30.

KINNEY—Julius C., Dept. 128. Seniority date July 10, 1956, retirement effective May 7.

KNIGHT—James S., Dept. 140. Seniority date Sept. 15, 1947, retirement effective July 16.

LUSE—Mary F., Dept. 140. Seniority date July 29, 1951, retirement effective Aug. 9.

MEGARGEE—Nathan L., Dept. 192. Seniority date Nov. 3, 1947, retirement effective Sept. 16.

MOREHEAD—Leo B., Dept. 133. Seniority date Sept. 23, 1952, retirement effective Aug. 2.

NAAS—Howard C., Dept. 3-1. Seniority date July 27, 1948, retirement effective Sept. 13.

ROBARE—Frank E., Dept. 115. Seniority date Nov. 3, 1950, retirement effective Sept. 16.

SMITH—Glenn E., Dept. 192-5. Seniority date Nov. 18, 1940, retirement effective Aug. 30.

THOMAS—John, Dept. 25-5. Seniority date April 17, 1950, retirement effective Aug. 16.

TROWBRIDGE—George P., Dept. 192-2. Seniority date Feb. 26, 1953, retirement effective Sept. 13.

WADE—Raymond A. Jr., Dept. 192. Seniority date March 30, 1953, retirement effective Aug. 20.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Sept. 6 and Sept. 20.

Dept. 15, F. D. Heflin Jr., $42.50.
Dept. 26, B. J. Begue, $17.
Dept. 42, E. Briscoe, $10.
Dept. 48, R. J. Harris, $20.
Dept. 129, B. F. Armas and R. F. Lanzo (Dept. 128), joint award, $10.55 each, final payment.
Dept. 400, S. W. Kellogg, $17.50, final payment.
Dept. 401, E. R. Boucher, $10.

Cost Improvement Proposals for the same periods.

Dept. 3, S. W. Rowland Jr., K. W. Wulfemeyer and E. V. Torp (Dept. 91), joint award.
Dept. 42, C. E. Keptner, F. L. Olson.
Dept. 91, H. A. Kayes and B. W. Vincent, joint award.
Dept. 93, J. J. Jodka.

Rider-Driver

CONVAIR

RIDE WANTED—8 a.m. to 4:30 p.m. shift, from city of El Cajon to Plant 1. Richard H. Stohr, home phone, 442-2913.

General Dynamics NEWS

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GD/Electronics (San Diego) news contact: Helen Wood, 298-4641, ext. 1377, Plant 1, Bldg. 51.

Fort Worth Editorial Offices, Col. 72, Adm. Bldg., GD/Fort Worth, Mail Zone 0-50, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

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SPECIAL SUPPLEMENT

★ ★ ★

RETAIN FOR FUTURE REFERENCE

HIDDEN DOLLARS-

Benefits, Services Are Employee 'Bonus'

Besides job satisfaction, a sense of personal contribution to national defense, and direct financial reward, there are other less apparent factors which make General Dynamics/Convair and GD/Electronics desirable employers.

Some of these—Company paid insurance, retirement benefits, etc.—involve a sizable cash outlay for benefit of employees.

Others can be measured only in terms of convenience—such frequently taken-for-granted items as in-plant food and beverage service, medical care, military deferments, recreation programs, etc.

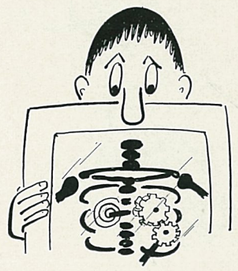
Considered together, these "fringe benefits" add up to an extra paycheck for every Company employee: hidden dollars from which he profits, even though not credited to his bank account.



Medical Attention

The medical department of Convair and GD/E, together with safety section, is dedicated to providing the most wholesome, safe, productive working environment possible for employees.

The medical department provides emergency medical attention concerning injuries and illnesses while at work. It also gives physical examinations prior to employment to insure that employees are physically fit to perform assignments without jeopardizing their health or work performance. These services are provided at no cost to employees. The primary concern of the medical department is not to replace the services provided by employees' family physicians, but to provide additional assistance in maintaining the health of employees.



Dollars For Ideas

Hourly employees at GD/Convair and GD/E who conceive new ideas that result in such improvements as increased production, savings in materials and time, elimination of safety hazards, etc., can qualify for cash awards through the Employee Suggestion Program.

Salaried employees get recognition through the Cost Improvement Program.

Forms for submitting ES and CIP ideas are provided at convenient locations and contain complete instructions.

Insurance Provides Protection For Employees and Dependents

Insurance provided by GD/Convair and GD/E, plus the additional protection available at low group rates, gives employees a solid financial buffer against economic catastrophe which might result from death or serious illness.

General Dynamics provides $5,000 in free life insurance for each hourly employee, while salaried personnel are insured for $8,000.

Employees make only small weekly contributions (by payroll deductions) to boost their life insurance protection to a maximum of $13,000 for hourly, $40,000 for salaried workers, according to their basic earnings.

The Company provides numerous other free insurance lifeguards, including health insurance, disability and accident benefits at no cost to employees.

This includes accidental death and dismemberment benefits to $5,000 and payment of major medical expenses to $5,000.

An employee who becomes permanently and totally disabled before age 60 and whose insurance is in effect, will receive the amount for which he was insured (up to $26,000) at the time he stopped working.

For only $2.53 a week, employees can purchase health insurance for their dependents. This same low rate supplies coverage for all dependents.

In addition to group insurance, Convair and GD/E employees are supplied with still more protection when traveling on company business, when performing assigned tasks under provisions of "Missile Risk" insurance, and under other specific circumstances.

California employees are also covered by the California Unemployment Disability Insurance Plan, sharing cost of this coverage with the Company through automatic payroll deduction. In general, this supplies "bread-and butter" dollars to employees absent from work due to non-occupational illness or injury.

Occupational illness or injury is covered by Company-paid Workman's Compensation Insurance.

A $1,000 Company-paid life insurance policy is provided for all employees participating in General Dynamics' retirement plans.

In-Plant Classes

Convair and GD/E offer many courses which have direct application to employee assignments. Since these are not available through college curricula, the courses are offered in-plant.

Many courses which have a direct bearing on current research and development programs are conducted during normal working hours for personnel requiring such training.

Information on these courses can be obtained by contacting educational services representatives.

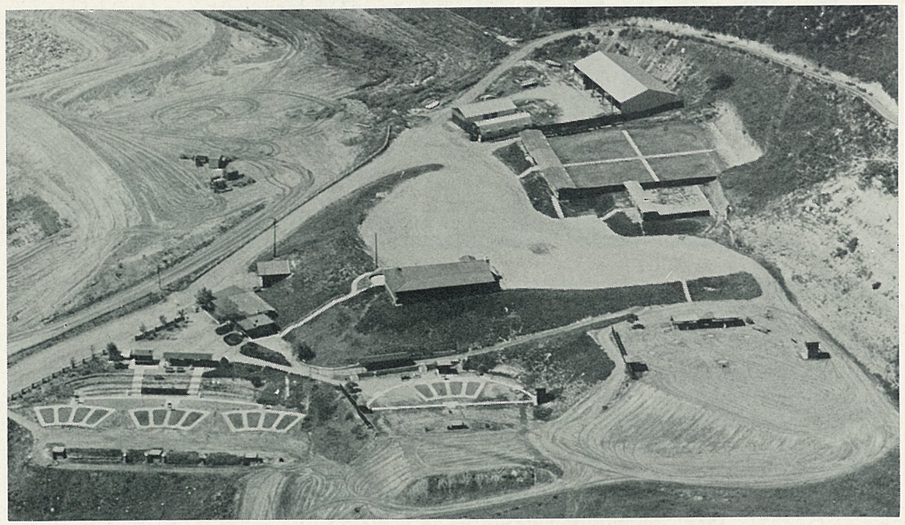
Educational Leaves

Employees with one year of continuous service who wish to obtain an advanced degree in a job-related field may apply for an educational leave of absence.

If approved, the employee continues to participate in whatever Company insurance programs are in force at the time.

Employee Discounts

Special discount tickets for outstanding entertainment attractions including Disneyland, ice shows and leading local attractions are available at employee services.



LEISURE TIME—Aerial view shows Gillespie skeet and trap shooting facility operated by CRA for employees.

CRA Master Calendar

Activities of GD/Convair Recreation Association are open to GD/Convair and GD/Electronics employees and members of their families. CRA Council officers are: Gerry Wright, president; Bob Menzie, vice president; Pete Beyrer, treasurer; Evelyne Thrall, secretary.

Following is a list of CRA activiites and commissioners. Information is available from CRA Office, ext. 1245, Plant 1, on all clubs and recreational facilities.

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site. Commissioner Don Larsen, ext. 1308, Plant 1.

ARCHERY — Monthly shoots second Sunday of each month, Balboa Park Field Range. Commissioner Al Phipps, home phone, 295-8194.

BASEBALL—Plant team entered in Industrial League. Commissioner Pete Beyrer, ext. 1245, Plant 1.

BASKETBALL—Intra-plant play during season. Commissioner Gil Crosthwaite. Call CRA office, ext. 1245, Plant 1.

BOWLING—Leagues bowl year-round at major bowling alleys. Commissioners Jim Hayman, home phone, 469-1262, and Mike Brooks, home phone, 469-8793.

BRIDGE CLUB—Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Call Frank Westphal, club president, ext. 2321, Plant 1.

CAMERA CLUB — Joint CRA-ARA meetings first Sunday of each month, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Meetings third Thursday of each month, 7:30 p.m., Convair executive dining room, Pacific Hwy.

DELTA DIVERS—Skin diving instruction and outings scheduled in summer months. Meetings third Tuesday of each month, 7:30 p.m., Convair executive dining room, Pacific Hwy. Commissioner Harry Ruscigno, ext. 420, Plant 71.

FENCING CLUB—Workouts and instruction each Friday night, 7-10 p.m., YWCA, 10th and C Sts.

FISHING CLUB—Meetings third Tuesday of each month, 7:30 p.m., Gillespie Field Clubhouse, Potluck dinners, 6:30 p.m. Commissioner Bob Menzie, home phone, 281-8247.

GARDEN CLUB — Joint CRA-ARA garden shows throughout year. Meetings first Wednesday of each month, at ARA Clubhouse or Floral Association Bldg., Balboa Park. Commissioner E. L. Zimmerman, home phone, 277-3382.

GLIDER CLUB—Meetings every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Commissioner Don Larsen, ext. 1308, Plant 1.

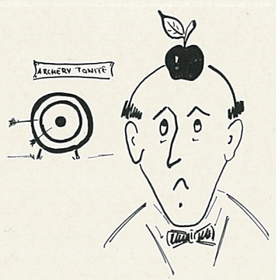
GOLF—CRA tournaments held once a month. Commissioner Ken Wulfemeyer, ext. 1705, Plant 1.

GUN CLUB—Club meets second Tuesday of each month, 7 p.m.; rifle, trap, skeet club shoots first Sunday of each month at Gillespie Field Range; registered trap and skeet shoots scheduled throughout year; open shooting each Sunday, Wednesday, and Friday evening during summer months. Commissioner Jack Swank, ext. 2583, GD/E Plant 1.

ICE SKATING—Skating sessions for General Dynamics employees Thursdays at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

IN-PLANT ACTIVITIES — Equipment available for horseshoes, washer pitching, shuffleboard, chess, checkers, cards for bridge, pinochle, etc. Contact CRA headquarters, ext, 1245, Plant 1.



MOVIES—Reduced-price movies every day at State Theater, Euclid & El Cajon Blvd. Admission: adults, 75c; children under 12, 20c.

PISTOL CLUB—Club shoots second and fourth Sundays of each month at 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave. Commissioner Joe Williamson, ext. 481, Plant 1.

RADIO CLUB—Club meets Thursday after issue of General Dynamics NEWS, 8 p.m., at Radio Club Headquarters, Harbor Drive. Commissioner Jim Lack, ext, 2958, Plant 1.

RIDING CLUB—Regular meeting first Thursday of each month, 7:30 p.m., Gillespie Field Clubhouse. Outings scheduled during year. Commissioner Tommy Thomason, ext. 475, Plant 1.

ROAD RUNNERS—Trailer club meets third Thursday of month, 7:30 p.m., Gillespie Field Clubhouse. Weekend outings throughout year. Commissioner Ralph East, ext. 1347, Plant 1.

ROCKHOUNDS — Regular meetings second Thursday of each month, 7:30 p.m., Gillespie Field Clubhouse, Weekend field trips during winter months. Lapidary workshop open Wednesday evenings for instruction. Dan Whorton, commissioner, ext. 2058, Plant 1.

ROLLER SKATING—Free tickets at employee services for General Dynamics skate night third Monday of each month at Skateland, Front and G Sts.

SKI CLUB — Outings and meetings during winter months. Commissioner Joe Harris, home phone, 284-0278.

SOFTBALL—Plant league play during season. Commissioner Tony Berardini.

SOLO FLYERS—Ground school classes Thursday nights, Jim's Air Service. Commissioner Don Larsen, ext. 1308, Plant 1.

SPORTS CAR CLUB—Meetings first Wednesday of month, 7:30 p.m., Convair executive dining room, Rallys scheduled throughout year. Commissioner Gerry Wright, ext. 1130, Plant 1.

STAMP CLUB—Meetings first Thursday of each month, 7:30 p.m., Convair executive dining room. Commissioner Jack Benedict, ext. 1141, Plant 1.

SWIMMING—Family swim night second Saturdays, 7-9 p.m., Mission Beach Plunge. Discontinued during winter months.

WATER SKI CLUB—Skiing weekends on Mission Bay on phone-call basis. Commissioner Gene Sevigny, ext. 2701, Plant 1.

Big Recreation Investment

GD/Convair and GD/Electronics employees at San Diego are richly endowed when it comes to recreational facilities.

Available to them are Gillespie skeet and trap shooting facilities, Pecan Park picnic area and 90-acre Pine Crest, mountain resort. No other company can boast such varied and extensive facilities.

The areas are operated by Convair Recreation Association to which all employees belong automatically, without charge. CRA is directed by a Council appointed by the manager of personnel services. Among Council members are the hard-working commissioners who head up the many different activities. (See Master Calendar.)

Military Deferments

The Company will request Selective Service deferments for employees under 26 years old and having a military obligation, if they are hired into, or transferred to, "critical skills" job assignments.

Deferment requests are coordinated through the employee services office, which also assists employees in determining their "critical skills" status.



In general this classification applies to engineers, to foremen in critical occupations, and to certain other essential skills.

Tool Stores Serve

Under employee services direction, an independent company operates Employee Tool Stores in Bldg. 32, Plant 1.

Here employees may purchase high quality hand tools at discount prices, arranging payment (up to $25 at one time) if desired through a payroll deduction plan.

RETIREMENT PLANS BUILD FOR FUTURE

Retirement plans for both hourly and salaried employees provide Company personnel with a sound base upon which to build a personal program for economic security after retirement.

All hourly employees under 65 years of age are members of the plan, with the Company paying the entire cost.

An optional plan is provided for salaried employees, with the Company paying the bulk of the cost and employees contributing five per cent of their income above Social Security base ($400 per month) to provide the balance.

Under either plan, retirement income (including Social Security) may amount to more than 65 per cent of average normal earnings.

In the case of salaried personnel who leave the Company or die before retirement, their full contributions are returned—with interest. And, dependent upon age and length of service, contributions by the Company may be "vested" for their benefit.

Salaried employees may join the retirement plan by completing an application form at employee services, if they are between 25 and 65 years old, and have been employed by the company for more than a year.

Employees who are not presently eligible may sign up for the plan at any time, with their participation beginning automatically when they become eligible. Retired salaried employees are eligible for membership in Management Club.

In addition, retired employees are automatically placed on the mailing list for **General Dynamics NEWS**, and are life members of Convair Recreation Association.

U.S. Savings Bonds

At the close of a recent in-plant campaign, a high percentage of Dynamics employees were saving regularly through payroll deduction purchase of U.S. Savings Bonds.

The bond program is administered by employee services, with employees authorizing deductions of as little as $1.25 per week toward purchase of bonds in denominations they specify. This is done by completing bond application cards available at employee services office.

Employees' Con-Trib-Club Aids All

Through their Employees' Con-Trib-Club, Company employees are afforded a convenient means to contribute to recognized charities in their own communities.

Voluntary contributions to C-T-C are made through regular payroll deductions: a means which may actually save employees money by providing them with records (for tax purposes) of all donations made. In addition, C-T-C affords employees the convenience of "giving only once" to all recognized charities.

Each C-T-C member receives a window sticker each year, which indicates to solicitors that he and his family have done their "fair share" in support of local charities.

C-T-C funds are administered through a committee comprised of representatives of unions and the Company.

Membership consists of representatives from IAM, EAA, IBEW, Management Club, and the Company. The committee members share in disbursement of funds to welfare, health, recreation and educational institutions.

Ten per cent of all donations to Con-Trib-Club are set aside for direct use by Company employees through the C-T-C-administered Emergency Aid Fund (EAF).

This fund is designed to provide financial assistance to employees and members of their families who may be faced with an "emergency"—an unexpected situation beyond the control of the employee which calls for funds exceeding his immediate resources from any reasonable means.

Typical of situations eligible for Emergency Aid are those which might leave an employee's family temporarily without food, clothing or shelter, or heavily in debt because of uninsured medical expenses or death.

EAF grants are outright gifts. They need not be repaid.

Formal application for Emergency Aid must be made by the employee himself. However, an employee services representative will arrange an appointment with any deserving employee who may be referred to EAF by a friend, supervisor, or union committeeman.

In some cases, it has been found that no financial aid is required. Often, applicants can help themselves—if they receive proper counsel, or if someone will intercede with their creditors on their behalf.

At other times, the problem may be one with which an outside agency can assist.

(Until recently, GD/Electronics employees at San Diego belonged to the GD/Convair Con-Trib-Club. Recently, however they formed their own organization which is now in the process of adopting constitution and by-laws.)

GD/Convair Con-Trib-Club committee members:

J. K. Field, company, chairman.
Gladys M. Story, IAM.
Ernie E. Larsen, IBEW.
William A. Ebel, EAA.
Durward D. Strange, EAA.
Paul C. Pearce, IAM.
Fred H. McLaughlin, company.
Ralph Montgomery, Management Club.
Jack Benedict, Management Club.

GD/Electronics Con-Trib-Club committee members:

J. W. Swank, company, chairman.
James Wheeler, Dept. 72, IAM.
E. M. Larsen, Dept. 34, EAA.
D. C. Newlon, Dept. 72, supervision.
William Lynt, Dept. 43, Plant 2.
C. E. Murdock, Dept. 66, GD/E Management Club.

A Typical C-T-C Year

The "doing power" resulting from the combined resources of General Dynamics/Convair and GD/Electronics employees who belong to Con-Trib-Club is impressive. Tabulated below are their donations to charities for fiscal year 1963.

DISBURSEMENTS

UNITED COMMUNITY SERVICES	$100,000
HEALTH:	
American Cancer Society	3,000
San Diego Heart Association	2,000
Muscular Dystrophy	500
San Diego County Association, Retarded Children	2,000
Others	5,300
WELFARE:	
Big Brothers of San Diego County	1,000
Family Service	1,500
Others	5,875
OTHER CHARITIES:	
Miscellaneous Agencies	9,000
TOTAL	$130,175
EMERGENCY AID TO EMPLOYEES:	
To date	4,347
GRAND TOTAL	$134,522

Lost & Found Dept.

Employees who lose personal property on Company premises or find lost articles may report to the "Lost and Found" department maintained in Bldg. 32.

Items are tagged with the finder's name when turned in, and may be reclaimed after a 30-day period if not recovered by owners.

Unclaimed articles are turned over to CRA for possible use, or are forwarded to a local charitable agency.

Writing Award Plan

GD/Electronics and GD/Convair employees are encouraged to write articles for recognized trade, technical, and professional journals through the Writing Award Programs.

A payment of $150 is made for each article accepted for publication.

GD/Electronics' plan is now in effect and GD/Convair's will be reactivated later this month.

BLOOD BANK

GD/Convair and GD/E employees are eligible to participate in the Blood Insured Program offered by the San Diego Blood Bank.

Under this program, employees may take out a family membership by donating one pint of blood, or paying $4, for which they receive complete protection for a year's time. This guarantees all the blood the family may require during the period.

Individual memberships are available at $2 for two-year coverage (or donation of one pint of blood).

Applications are available at employee services.

Advanced Earnings

In certain cases, Convair and GD/E employees can meet temporary financial emergencies by asking their supervisors to request a cash advance against wages or salary they have earned.

While this practice is generally discouraged, the employee services office will investigate requests, and, if appropriate, can arrange a cash advance up to amount for one pay period (less regular deductions).

Easy Bank Allotments

Through a payroll deduction plan, employees may make automatic deposits in a bank savings account at Bank of America, Five Points Branch.

Industrial allotment applications are available at employee services office where the program is administered.

And That's Not All!

Employee benefits do not stop with those enumerated here—most of which are administered by the employee services section of industrial relations.

In addition, safety section operates a safety crib where employees may purchase a full range of safety equipment including safety shoes and prescription eyeglasses on a payroll deduction plan.

Among many programs handled by educational services are an information service to supply data on courses available at area educational institutions, employee classes in-plant in a multitude of job-related subjects, and the tuition refund and educational leave programs described elsewhere.

FOOD, BEVERAGES SERVED IN-PLANT

Cigarettes, candy, pastries and beverages may be purchased from in-plant vending machines. Food services are provided for employees at cafeterias in Bldg. 32 and adjacent to Bldg. 19.

At meal hours, food is also available from canteens located at convenient points.

Food services are operated for GD/Convair by the Prophet Company; while Davidson Bros., a division of Automatic Retailers of America, manages vending machine operations.

A portion of vending machine profits is used to benefit all employees by providing financial support for GD/Convair Recreation Association (CRA).

Education Plans Refund Tuition

GD/Convair and GD/E employees regularly make use of the Company's tuition refund policy to pursue their education in subjects of mutual benefit to them and to the Company.

To qualify for refund, employees must be enrolled in a job-related (technical or professional) course at an accredited educational institution, must receive credit for the course, and must complete it with a grade of "C" or better.

Refunds are limited to tuition only (up to $150 per year).

Loan Convenience

Company employees (age 21 and over) can apply for bank loans without leaving the plant by completing forms available at employee services office.

Loans are made by Bank of America, Five Points Branch, San Diego.

Bank offers Company employees preferred interest rates and includes life insurance protection at no extra cost.

Employees must be with Company six months before applying.

Fair Job Practices

GD/Convair and GD/Electronics are Equal Opportunity Employers.

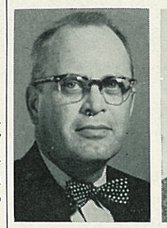
The Company has pledged that "all persons shall receive equal employment opportunities in accordance with their individual job-related qualifications, without regard to race, creed, color or national origin."

Directory of Services

(Convair)



D. C. WILKENS JR.
Director
Industrial Relations



J. K. FIELD
Manager,
Personnel Services



KEN WULFEMEYER
Coordinator,
Personnel Services



H. W. RUBOTTOM
Educational Services
Coordinator



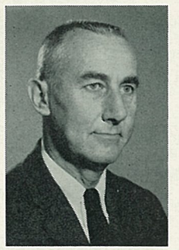
M. C. VAL DEZ
Senior
Safety Engineer

Employee Services Office
Bldg. 32, Plant 1, ext. 1245

Educational Services
Bldg. 15, Plant 1, ext. 491

Safety Office
Bldg. 32, Plant 1, ext. 464

(GD/Electronics)



GEORGE OATMAN
Industrial Relations
Representative



J. W. SWANK
Manager,
Industrial Relations

Employee Services Offices
Ground Floor, Bldg. 51, ext. 2583

Rapt Audience Hears Davis Discuss F-111

(Continued from Page 1)

B-58 (at that time, the world's most meticulously designed airplane) had at its maiden flight.

He said the program now involved some 6,500 people working at Fort Worth, GD/Convair, Canadair Ltd., GD/Electronics, Grumman, McDonnell and 16 other subcontractors. In addition, separate programs are under way on a fan after-burning engine for the plane, and a complete missile system is being built by Hughes for the Navy version.

At this point, the Development Engineering Inspection (mock-up) has been completed a full week ahead of schedule.

Davis also commented on the lengthy investigation which has enveloped the F-111 program since its award:

"In a contract of this size, it (the investigation) was not unexpected," he said. "And from it we've learned many things we might not otherwise have known.

"We learned, for example, that GD/FW won the technical evaluation on every round of the competition. We also learned that the Secretary of Defense and the Secretaries of the Air Force and Navy looked beyond the recommendations they received from below: a difficult and courageous thing to do, and they did it."

He joked, "Our ambition now at GD/FW is to fly the F-111 before they finish the investigation."

Davis' San Diego appearance brought the veteran General Dynamics executive back to the site of earlier days in his career. He commented on renewed acquaintance with many old friends from his days as a Vultee Field test pilot and later assignments in the old Convair organization.

"One of General Dynamics' strengths comes from the fact that there is an interchange of people from division to division," he said. "The resulting alloy is stronger than any one division might be by itself."

Quoting Roger Lewis, Dynamics president, Davis emphasized that, "The defense industry has an obligation to the nation to remain strong and viable. We can best insure our survival by insuring that we are flexible and can bring the best resources available to bear on any problem arising anywhere within the Corporation."

Davis was introduced by W. H. Patterson, GD/Astro vice president—advanced product planning, whose department sponsored the meeting.

Introduced from the audience were I. M. Laddon, member of General Dynamics board of directors, and his son.

At the head tables were J. R. Dempsey, GD/Astro president, and members of his staff; W. T. Lake, General Dynamics Corporation comptroller; J. L. Lombardo, general manager, GD/Electronics—San Diego; and D. C. Wilkens Jr., director of industrial relations, GD/Convair.

Microfilm Recorder Pushed as Answer To Paper Work Rise

General Dynamics/Electronics' S-C 4020 Microfilm Recorder was advanced as a solution to the mountains of paper work generated by electronic data processing centers in a paper presented by D. O. Brending, GD/E - San Diego requirements representative, at the 77th annual convention of Printing Industry of America, Inc., in Los Angeles last month.



D. O. Brending

In his talk on "Can We Cut Paper Work to Zero?" Brending pointed out that the recording of computer output on microfilm could cut to a minimum the stacks of paper swamping large scale data processing centers.

He cited one instance of a computer center that prints 60,000 pages a day seven days a week, with the volume expected to double in the next year. "It doesn't take a high speed computer to figure out that it is impossible to read all this printed data," he said.

With the high printing speeds of the S-C 4020—it can print alphanumeric information at speeds of over 6,000 lines per minute and can draw complex graphs in less than a second—together with its versatility and adaptability, it could prove invaluable in solving the mounting problem of paper work, Brending said.

GD/Electronics has been developing microfilm recorders over the last several years with the first S-C 4020 delivered in 1960. There are now 24 S-C 4020 installations throughout this country and Europe.

DUCKS UNLIMITED TICKETS ON SALE

General Dynamics nimrods (duck hunting variety) will join their counterparts in the San Diego area Oct. 10 for their 20th annual San Diego Ducks Unlimited dinner at Hotel del Coronado.

Tickets for the event are available through George Cowan (Astro ext. 1061) or Payne Johnson (GD/Electronics, ext. 1377).

Proceeds from the annual affair are used for restoration of waterfowl breeding areas in Canada.

GD/E Radar Movies Released For TV

Navy film coverage of the flight testing of GD/Electronics-San Diego terrain following radar was released to San Diego television stations, KOGO and KFMB, for showing on news programs late last month.

Shots were taken during the first military trials of the GD/Electronics-developed system at NAS, Patuxent River, Md., during May and June. They included both film taken from the ground and from the A4C jet plane used in the tests.

Most of the flights were made over a low-level test route across rugged regions of the Appalachian Mountains at different speeds and in all kinds of weather to test the GD/E system.

Fishing Club to Dine On Marlin Wednesday

Marlin will be on the bill of fare for the CRA Fishing Club at its annual fish fry next Wednesday night (Oct. 9) at Gillespie Field Clubhouse.

And there will be plenty for any GD/Convair or GD/E people who would like to attend, said CRA Commissioner Bob Menzie, who with Bob King of Astro, caught the big fish just for the occasion.

Date of the gathering has been set up from the originally-scheduled Oct. 15 monthly meeting. Potluck will be at 6:30 p.m. and regular business meeting at 7:30 p.m.

Fish also was main course at the September meeting. Following the usual business session Joe Sopko showed his slides taken in Alaska.

VAL DEZ ATTENDS COMPENSATION MEET

M. C. Val Dez, GD/Convair senior safety engineer, was present at the California Manufacturers Association's fifth annual conference on workmen's compensation in Monterey, Calif., Sept. 19-20. Val Dez is a member of the Association's workmen's compensation committee for 1963.

GD/Convair Mgt. Club Will Meet at SDAC

Next GD/Convair Management Club meeting has been set for Thursday (Oct. 24), instead of the usual Wednesday date.

The dinner meeting will be held at the San Diego Athletic Club, 1250 Sixth St., with John Rohrbough of the 11th Naval District main speaker.

Prominent sports personalities are being invited, said Co-chairmen L. G. Lawson and H. P. Williams. Sponsoring department is quality control.

Tickets at $2.75 each will be available from regular ticket outlets.

Five Appointed To Club Posts

Two new officers and three board of control members have been named by Ralph Montgomery, GD / Convair Management Club president, to finish out terms of members who have resigned their posts.

Joe Freeman (Dept. 42) replaces D. L. Macey as first vice president. Macey has transferred to GD/Electronics. No replacement will be named for Freeman's former office of second vice president.

C. F. Uhl (Dept. 171), former board of control member, will complete the term as treasurer, replacing L. F. Tubbs now with GD/Pomona division.

Ray Niski (Dept. 171) is new one-year board member; D. D. Dimmitt, GD/Convair fire chief, and M. C. Tombler of Dept. 6 are new two-year members of the board.

New Ground School Course Still Open

General Dynamics people hoping to earn their wings can still enter the CRA-sponsored ground school course if they attend tomorrow's (Oct. 3) class at Jim's Air Service, Lindbergh Field.

They will have to catch up on the material given at the first class meeting last week, said Harold Ayer, president of the CRA Solo Flyers who are sponsoring the instruction.

Classes are held each Thursday evening at 7:30 p.m. for 14 weeks. Instructor is Ian Lansdown.

Ground school training is required for all persons who wish to qualify for private pilot licenses.

Stamp Fans to Meet For First Session

Stamp fans at GD/Convair and GD/Electronics will meet tomorrow (Oct. 3) for their first fall meeting.

It will be held in the GD/Convair executive dining room at 7:30 p.m.

Commissioner Jack Benedict says that an auction will be held during the evening and door prizes given.

Discounts Offered For Plaza Skating

General Dynamics employees are offered special rates for skating at Mission Valley Ice Plaza during October by using discount coupons now available at employee services offices.

Coupons may be used at any regular session at the rink, and trim 25 cents off admission price.

Members of CRA-ARA Ice Skating Club who obtain coupons for use at the group's private Thursday, 6:30 p.m., sessions, save 35 cents—25 cents with the coupon, plus the regular 10 cent mark-down for club members.

Saturday Salvage Schedules Noted

Saturday morning schedule for employee sales at GD/Convair and GD/Astro salvage yards for the next four weeks is:

GD/Astro—Oct. 5, 19.

GD/Convair—Oct. 12, 26.

Sports & Recreation

Fire Dept. Bowlers 'Hot' as They Finish First in Loop Race

Torrid keglers of GD/Convair fire department wound up their summer bowling season with Team No. 3 out ahead in the five team race.

The winning combination of Charles Hamel, Ralph Halstead, Cecil Parker had 61½ points out of a possible 96 at end of league play Sept. 18.

Runner-up was Team No. 4 with 49½ points. Second-place team members were Fred Green, Robert McConnell, and Harvey Catledge.

Teams bowled 72 games during the season which ran from Feb. 27 to mid-September at Frontier Lanes. One point was received for each game won and one point for total pins each week.

Team No. 5 had high team game of 587, and Team No. 2 rolled high team series, 1,602.

Leo Slosser held high individual series, 627. Robert Purdy had high individual game, 240.

CRA trophies will go to each man on the winning team and the fire department will furnish individual trophies for high game and high series.

Halfacre, Williamson Share Shoot Honors

Jim Halfacre took the .45-cal. Short National and was in second place in .22-cal. Police Course competition at CRA Pistol Club's Sept. 22 matches.

Halfacre shot a 261 in the Short National to beat strong contender Joe Williamson. Williamson was second with 246. However, he didn't entirely relinquish top billing as he shot a 294 to win the Police Course event.

Halfacre's Police Course score was 285. W. G. Walker was third with a 281 and Ralph Picard of GD/E, third, 267.

Walker and Picard traded places in the Short National with Picard's 243 good for third spot. Walker was fourth with 179.

Road Runners Plan To Exhibit Trailer

CRA Road Runners planned to display their prize-winning miniature trailer and "road runner" again at this year's rally of Border District Trailer Clubs of America.

Carl Scholl, club president, was in charge of the Convair group's participation at the annual rally, Sept. 26-29 at Del Mar Fairgrounds.

Next outing of CRA trailerites will be over the weekend of Oct. 11-13 to Lake Otay.

'Disneyland News' Copies Available

Copies of the "Disneyland News," official publication of the amusement park's Magic Kingdom Club, are available at GD/Convair employee services for all GD/Convair and GD/E people.

The 12-page brochure contains details on Disneyland activities, contests, special attractions, and calendar of events for the rest of the year.

WESTERN MICH. U. ALUMNI TO MEET

Alumni of Western Michigan University, Kalamazoo, Mich., are invited to listen in on the closed-circuit telephone broadcast of the homecoming football game with Kent State University, Ohio, on Saturday, Oct. 19, at the Mission Valley Inn. Brunch will be served. Reservation information may be obtained from Gene Hartzler, GD/Convair Dept. 97. Plant 1, ext. 2342.

Deadline Is Near For Golf Signups

Golfers at GD/Convair and GD/Electronics have only a couple of days left to sign up for the annual CRA Plant Golf Championships.

Deadline for entries is this Friday (Oct. 4).

Championship match play is scheduled for three Saturdays, Oct. 19, 26, and Nov. 2, at Carlton Oaks Country Club.

Commissioner Ken Wulfemeyer reminds entrants that they must have established handicaps and must have taken part in at least three CRA tournaments since January to be eligible.

Entry fee of $5 must be paid at time of sign-up.

Call ext. 1705, Plant 1, by the deadline date to enter.

Rockhounds to Visit Mojave Desert on First Autumn Jaunt

First field trip for the fall season for CRA Rockhounds has been scheduled for the weekend of Oct. 12-13 to the Mojave Desert area.

Members will meet at Rosamond. Directions will be sent to members and will be available in the CRA office, said Commissioner Dan Whorton.

Ralph Phillippi and Fred Dunivan are in charge of arrangements.

Members also are planning to take part in the annual Rockhound Roundup at Morton's Mining and Minerals near Barstow Nov. 9-10.

Plans for both events will be made at the coming Rockhounds meeting Oct. 10, 7:30 p.m., at Gillespie Field Clubhouse.

Three exhibitors from the Convair club took second places at the annual Gemboree Sept. 21-22 at Del Mar. Commissioner Whorton, Homer Popplewell, and Joe Rogers won awards on their displays of world-wide cabochons, stones cut in convex form.

HORSEMEN GATHER FOR ANNUAL DANCE

A "big time was had by all" at CRA Riding Club's annual family get-together at Gillespie Field Clubhouse Sept. 14, said Commissioner V. V. Thomason.

A record number of 74 turned out for the potluck dinner and dancing to the club's five-piece combo.

Honored guests were C. L. Pogorel, former commissioner, his wife and mother-in-law, and members of the disbanded Color Guard: Lou Barbour, Roy Sims, "Shorty" Westcott, and Turner Albright.

Regular monthly meeting will be tomorrow (Oct. 3), 7:30 p.m., at Gillespie Field Clubhouse.

A Halloween masquerade is planned for later in the month.

Lens Club Will Hear About Night Photos

CRA and ARA shutter bugs will have a chance to try their skill in the dark this Sunday (Oct. 6) as they learn the tricks of night photography.

Members will meet in Balboa Park's Photo Arts Bldg. at 7:30 p.m. to hear a lecture on the subject. After a demonstration and slide show of night shots, they will take a short excursion around the area to practice what they have learned.

Everyone attending is reminded to bring along cameras, film and tripods.

Mother—"Why are you making faces at that bulldog?"

Small Child (wailing) — "He started it."



"COUNTDOWN" — Checkout facility at GD/Convair takes on pre-launch atmosphere as systems of Little Joe II are meticulously checked by new checkout board before shipment to customer. Around table, from left, are J. J. Murphy of engineering; Richard Bloom, launch operations engineering representative; E. E. Christian, BUWEPS inspector for NASA; J. D. Sanders of GD/ Convair inspection; W. I. Gregory, Dept. 131 assistant foreman. At board Dept. 131 technicians, C. A. Gonzales and W. B. House, call off meter readings.

Blockhouse Reproduced To Test Little Joe II

A realistic blockhouse operation has been duplicated, as nearly as possible, in the Little Joe II checkout facility at General Dynamics/Convair to test the second launch vehicle—and those yet to come—before delivery to the customer.

A fully-wired board has been developed to set up a Little Joe II and perform checkout of electrical and instrumentation systems, just as if it were on the launch platform. In fact, the checkout board can simulate everything but actual firing of the "bird."

The board has been arranged to represent the actual launch complex at White Sands Missile Range, with a duplication in miniature of all the wiring there. The only difference is in length of the lines. Wires, which at the New Mexico range may run 60 feet, are cut to the few feet needed to connect the board with the vehicle just outside the small wooden building in the experimental yard.

Areas on the board are divided electrically into the same areas as in the field, where the blockhouse stands 1,200 feet from launcher and an equal distance from the power room, 150 feet from the launching pad to complete the complex triangle.

But no countdown tension could be any more intent than that in the small GD/Convair checkout facility as company engineers and inspectors rivet their attention on the same detailed step-by-step checkout procedures. A complete checkout can extend from a few days to two or three weeks, depending upon the individual configuration of the vehicle. A Navy BUWEPS inspector sits in to observe results for NASA before customer buy-off.

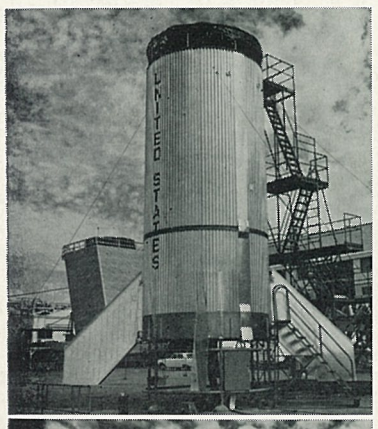
"The board was developed from necessity through a cooperative effort and grew rapidly to its present state," explained N. R. Keough, Dept. 131 superintendent. "It assures us of a complete factory check before the vehicle is shipped to the customer.

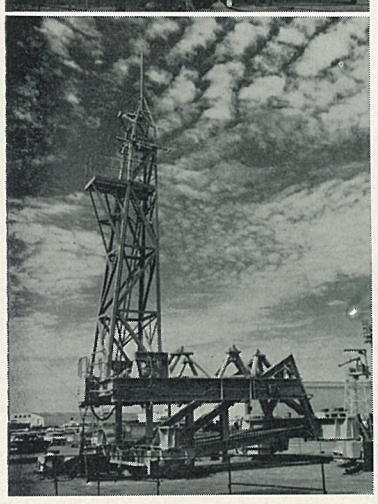
"The board itself is based on the wire data book put together by GD/Convair engineering for use at White Sands, and can be revised and modified as we keep abreast with all changes incorporated at the firing range. This allows thorough proofing before the vehicle goes to the range and reduces workload and cost of checkouts in the field."

Wiring on the board is divided into five areas—each area a junction box. Another junction box is on the stand to represent one of the half dozen on the launcher. Wires run through a cable from the board to a junction box on the vehicle just outside the building. Three umbilical cables run down the side of the vehicle to connect with expendable cables at the launcher junction box.

When power is switched on, accurate operational checks can be made on such systems as the Algol and Recruit rocket motor ignitions, command destruct control system, which is wired and checked out with the GD/Convair-installed systems, and telemetered instrumentation.

Readings are taken from meter gauges and recorded on operational checkout instructions (OCIs). The customer can request reruns on any section of the testing to confirm OCI information and to assure that the systems operate well within limits of specified operation conditions before the vehicle is accepted.





NO. 2 LITTLE JOE II—Second Little Joe II launch vehicle (upper shot) and launcher completed at GD/Convair are snapped in division's experimental yard after checkout. They will be shipped to White Sands Missile Range, N.M., later this year for NASA's Apollo spacecraft testing.

Surveyor Manager Will Speak Oct. 3

W. E. Giberson, project manager of NASA's Surveyor program, will be main speaker at tomorrow night's (Oct. 3) meeting of the San Diego Chapter of the Aerospace Electrical Society.

General Dynamics people are invited to hear Giberson describe the program which will lead to unmanned exploration of the moon's surface. The Surveyor will be boosted into space by Centaur.

Meeting will be held at 7:30 p.m. at the IAS Bldg., Harbor Dr.

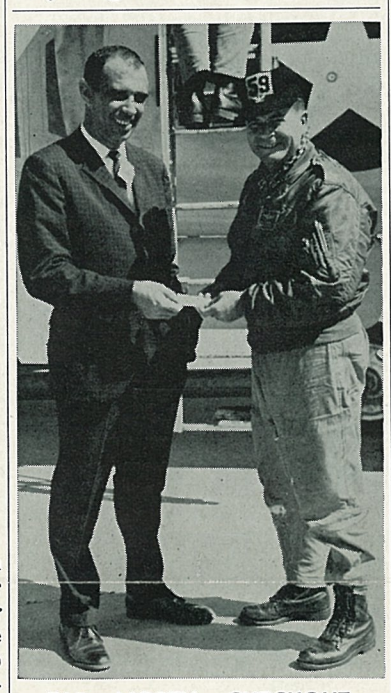
PHYSICIST SPEAKS TO GROUPS ABROAD

Dr. T. J. Gooding, General Dynamics/Astronautics physicist in the space science laboratory, will wind up a series of talks before professional groups in his native England next week.

On Sept. 26 he talked to two groups in the Institute of Physics and the Physical Society at the Culham Laboratory, Abingdon, Berkshire County. Culham is the English center for thermonuclear research.

On Oct. 8 at the United States Information Agency in London he will address a select audience of scientists, teachers and journalists. He will speak on "Scientific Research in the United States."

Born in England, Dr. Gooding graduated from the University of Wales, then earned a doctorate at the University of Minnesota while teaching there under a Fulbright scholarship. Following a return to England he worked for the Atomic Energy Research Establishment, Harwell. He then joined the Lawrence Radiation Laboratory at the University of California where he worked prior to joining Astro in 1961.



FAR NORTH CHECKOUT — Col. E. R. Haydon, new commander of 59th FIS, Goose Air Base, Labrador, receives pilot's pin after checking out in GD/Convair F-102 from A. E. Gaull, GD/Convair field service rep.

LIQUID CARBONIC CHEMIST TO SPEAK

Dr. A. Matesanz of General Dynamics' Liquid Carbonic division will be guest speaker at the Oct. 21 meeting of Southern California chapter, Society of Automotive Engineers, in Roger Young auditorium, Los Angeles.

Dr. Matesanz is a research chemist with Liquid Carbonic's research and development department in Chicago. His remarks will deal with cryogenics, new developments and trends in their application, liquefaction cycles and separation processes in their production, and superinsulations.

Details on the meeting are available from T. M. Paddock, 278-0102, Liquid Carbonic's San Diego manager.

Specialists Invited To Send Abstracts

Dr. Mel Freitag of GD/Astronautics is program chairman for the symposium to be held by Professional Technical Group on Human Factors in Electronics, Institute of Electrical and Electronic Engineers (IEEE) in San Diego next May 5 and 6.

He has issued a call to interested specialists to submit abstracts of original, unpublished papers fitting the symposium theme, "The Challenge of Interdisciplinary Technology," to him at his home, 1910 Shire Dr., El Cajon, Calif.

Abstracts should be no more than 500 words in length, and must be submitted by Oct. 30.

Clearer Communications Urged In Reliability, Quality Control

A communication barrier is preventing reliability and quality control programs from being as effective as they should be, Capt. William C. Hushing, supervisor of shipbuilding at GD/Electric Boat in Groton, Conn., told the General Dynamics Reliability Panel last month.

Speaking at a dinner meeting of the 31-member panel, Capt. Hushing said the English language in itself is difficult to understand, and that reliability and quality control need a common terminology that can be readily grasped by everyone.

He urged members of the panel "to engineer communication so people will understand the real meaning of quality assurance, and reliability."

Warning that this will become more vital as the state of the art develops, Capt. Hushing told panel members that they must undertake a program to break down the communication barrier. "This is an opportunity that cannot be ignored and no other group is so well qualified," Hushing said.

Frick Will Discuss Increasing Necessity For Quality Control in Space Vehicles

Charles W. Frick, vice president-engineering at General Dynamics/Convair, will be main speaker at the Oct. 14 dinner meeting of the San Diego Section, American Society for Quality Control.

Frick, who rejoined GD/Convair early this year after more than a year as NASA's manager of Project Apollo, the manned lunar landing spacecraft program, will discuss, "Necessity for Increased Quality Control on Space Vehicle Projects."

W. J. Martin, GD/Convair director of reliability, will moderate the program.

The meeting will be held at Del Webb's OceanHouse on Highway 101. Social hour is at 6 p.m.; dinner at 6:30; and program at 8 p.m.

Members and interested General Dynamics people may make reservations through: J. S. Ortega, GD/Astro, booster chairman, Plant 71, ext. 1491; Paul Gelles, GD/Astro, Plant 71, ext. 4504; Walt Hackett, GD/Astro, Plant 19, ext. 501; Frank Moore, GD/Convair, Plant 1, ext. 663; Bill Huot, GD/Electronics, Plant 1, ext. 2649; Ivan Kemper, GD/Electronics, Plant 2, ext. 36; George Pilgram, General Atomic, ext. 1454.

Dinner price is $3.50 and ladies are invited.

Six Space Scientists To Address Society

Six General Dynamics/Astronautics space scientists will appear in a panel discussion during a national meeting of the Society for Applied Spectroscopy slated for the El Cortez Hotel Oct. 14-18.

Doctors Carlos N. Abeyta, J. C. Breeze, Carmine C. Ferriso, C. B. Ludwig and M. L. Strieff, along with Klaus G. P. Sulzmann, will take part.

Discussions will involve the effects of very high temperature gases produced when re-entry vehicles come back into the earth's atmosphere, and the heating caused by the hot exhaust of rocket engines of a million pounds of thrust on spacecraft.

Electric Boat Plans Floor Space Boost

Construction will begin next week at General Dynamics/Electric Boat division at Groton, Conn. on an additional 30,000 square feet of floor space to the Engineering Center to house design department personnel.

An additional story will be added to the design and nuclear engineering building.

DEADLINE SET FOR TECHNICAL PAPERS

General Dynamics persons planning to submit technical papers for presentation at the 1964 National Winter Convention on Military Electronics must have them in the hands of the technical program committee this week.

General theme of the annual conference will be "Weapons Systems Selection—1964," and industry papers dealing with such areas as ballistic missile systems, anti-ballistic missile defense systems, tactical warfare systems; related technologies; program management techniques and quality control and reliability will be considered.

The convention will be Feb. 5-7, 1964, in Los Angeles.

Papers, together with a 100-word unclassified abstract and short autobiography, are to be sent directly to Dr. N. A. Begovich, vice president, Hughes Aircraft Co., Ground Systems Group, Fullerton, Calif.

Astro Men on Panel For Quality Society

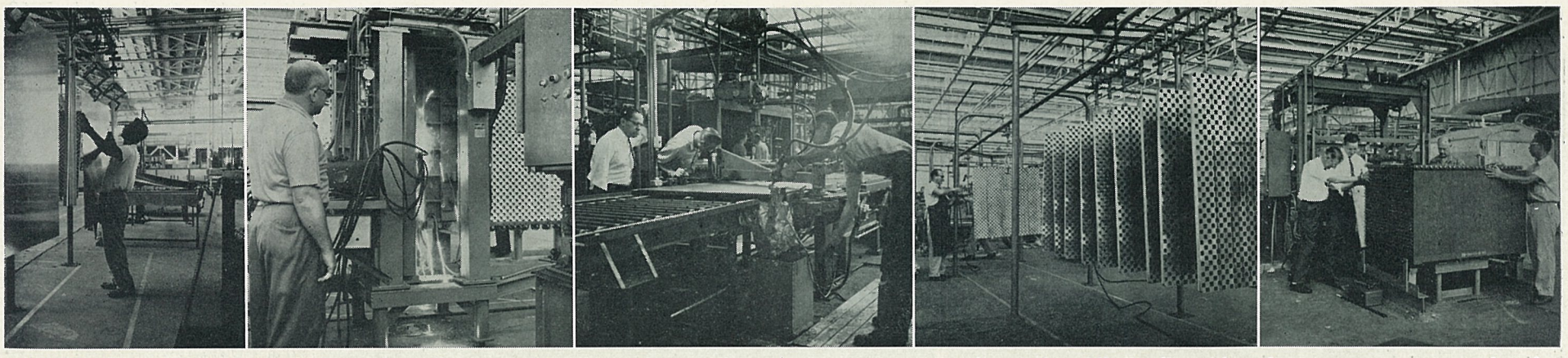
Phil I. Harr, director of reliability control at GD/Astronautics, was leader of a three-man Astro panel appearing before the September meeting of the San Diego Section, American Society for Quality Control.

Other panelists were W. E. Woodson, interdivisional representative for life sciences and M. L. Goldberg, manager of reliability control — NOVA study group.

Topic for discussion was "Reliability Must be Programmed" with emphasis on the group's professional development program. Discussions took in reliability considerations in research and development as related to space vehicle life support systems as well as environmental, psychological and physiological monitoring systems.



"We never DID get those safety stripes painted in the safety zones . . . Can you send over another volunteer?"



"INSTANT" MATS — Automated translator line went into action this month at GD/Convair, turning out aluminum core landing mats under Navy contract for test by Marine Corps. From left: (1) Pete House loads covers and end pieces onto overhead carriage that carries sections into cleaning tanks; (2) Russ Davis at core welder which joins two halves into single section; (3) W. G. Martin, SATS tool engineer, observes crew at potting station; (4) dimpling sides of cores to assure proper location within pan assemblies is T. L. Freeze; (5) C. U. Giusti, senior plant engineer, and George Carroll, Dept. 115 assistant foreman in charge of SATS production, check stacking of mats on pallet at end of line. At right are C. V. Martinez and S. W. Trotter. Initial shipments will go out this month.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol 16, No. 21 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, October 16, 1963

Confidence in Future Expressed by Horne

Management is a profession just as medicine or law and there is no place for amateur management within industry today, GD/Pomona President C. F. Horne told charter members of General Dynamics / Electronics - San Diego's new Management Club at Oct. 1 ceremonies.

"This is a significant occasion," Horne pointed out after his introduction by GD/E General Manager John L. Lombardo to a capacity crowd at "Charter Night" and installation in Mission Bay's Catamaran Hotel.

"A couple of years ago we weren't at all sure what the future would bring. Now, after only this short time, I want you to know that I feel more encouraged, more enthusiastic about the future of GD/E-San Diego than I have at any other time.

"You now have a real management team—one that will act as a unit and support each other!

"In establishing your own club and your own identity remember that a good division reflects credit on the entire Corporation, and at the same time recognizes that it is a part of that Corporation and takes pride in this, too.

"General Dynamics has been through some tough times, but today, I personally am more bullish about the long-term future of the Corporation than I have ever been. We have competent, professional management at the top as well as on the divisional level."

He stressed the value of a management group in providing a common base for mutual understanding and support.

"You must communicate," he advised his audience. "You must recognize how completely dependent one person is upon another. Try to see the other fellow's point of view, and, if you need help, ask for it.

"Remember this — as long as you can think, understand, communicate, you have a future—and this future looks very good to me for all of you!"

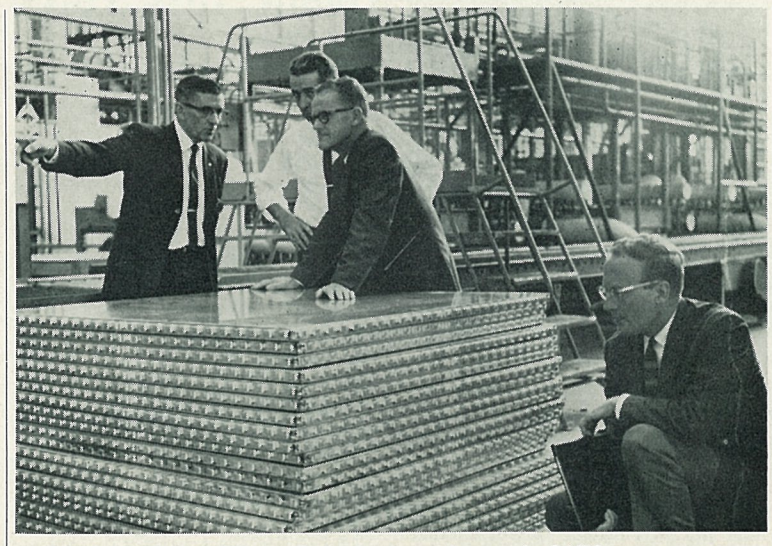
D. A. Graybill, GD/E project

(Continued on Page 2)





GD/E INSTALLATION — In lower shot D. A. Graybill accepts gavel as first president of newly-formed GD/Electronics - San Diego Management Club from J. J. Janda of GD/Astro, NMA Zone A director, at Oct. 1 ceremonies. From left in upper photo are Howard L. Richardson, Corporate vice president; GD/E General Manager John L. Lombardo; and C. F. Horne, GD/Pomona division president, who was speaker of evening at club's charter night.



SATS LINE CHECK — C. L. Jackson (center), SATS mats program manager; C. F. Blair (far left), fabrication superintendent; Harry Dvorak, group engineer; and R. E. Pearce (kneeling) consult on SATS mats production progress in GD/Convair's Bldg. 2.

Convair Begins Mat Production

Landing mats now are rolling off General Dynamics/Convair's translator line at the San Diego division with initial shipments expected this month.

Production of GD / Convair's concept of mats for the SATS (Small Airfield for Tactical Support) matting program culminates two years of intensive study and development under contracts from Naval Air Material Center, Philadelphia, Pa.

The aluminum core mats will go to the Marine Test Center at Twentynine Palms, Calif.

Since the automated assembly line in Bldg. 2 at Plant 1 went into preliminary operation the latter part of September, 2,000 mats have been fabricated.

GD/Convair's SATS mats program has a dual purpose: to build durable mats for test evaluation and acceptance; and to develop an assembly line capable of producing these mats at a competitive price.

"Both considerations are equally important in final evaluation," said C. L. Jackson, SATS mats program manager at GD/Convair.

"As in development of any new type of product and new and unfamiliar production methods, it takes time for training and adjustment.

"It is a well-established fact throughout industry that most automated systems require at least six months before they can be expected to operate smoothly. Based on such industrial experience, complete debugging and refinement of such an advanced fabrication as the present translator line is not likely with the limited quantities involved in the current contract.

"However, we are learning constantly and finding solutions as difficulties arise. For instance, since almost any failure causes total shutdown, as the system was designed to operate as an entire unit, we find that continuous operation can be helped by banks of material at established critical points."

Strand Returns To GD/Convair

Torstein Strand, an aerodynamics expert and widely published technical author, has been appointed assistant to C. W. Frick, vice president - engineering at General Dynamics/Convair.



T. Strand

Frick said Strand's advanced technical experience would be put to maximum use in the newly-created position and further strengthen the Company's accelerating research and development effort.

For the past year and a half, Strand has headed the aerodynamics section of Aerospace Corp. Systems Research and Planning Division, Los Angeles. From early 1960 to April 1962, Strand was director of research for Vehicle Research Corp., Pasadena.

Strand first joined GD/Convair as a design specialist in theoretical aerodynamics in 1956. For four years he conducted research on supersonic drag due to lift, supersonic wave drag and jet flap systems. Between 1954 and 1956, Strand was with Boeing Airplane Co., Seattle.

Strand was graduated from Massachusetts Institute of Technology, Cambridge, Mass., in 1947 with a BS degree. He was awarded an MS degree in 1948 and AE (aeronautical engineering) degree in 1954, Cal Tech.



WELCOME — GD/Convair President J. H. Famme welcomes military and civilian delegates to Sept. 25 Interceptor Improvement Program meeting hosted by GD division.

GD/Convair Hosts Military-Civilian Conference on Improving Interceptors

General Dynamics/Convair hosted a recent Interceptor Improvement Program meeting which drew about 50 Air Force military and civilian officials and industrial representatives to the San Diego plant Sept. 25.

IIP meetings are called periodically by the Air Force to review and coordinate activities of all agencies involved in improvement and modification of military interceptor craft. Planes under discussion at last month's conference were the F-102, F-106, and F-101.

Col. Ray Smith of the Aerospace Systems Division, Wright-Patterson AFB, Ohio chaired last

(Continued on Page 2)

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period Oct. 1 through Oct. 15.

Thirty-five-year: Dept. 131, Kurt Klein.

Twenty-five-year: Dept. 101, S. I. Moore.

Twenty-year: Dept. 6-5, W. B. Barkley; Dept. 11-0, Betty M. Devine; Dept. 25-1, C. A. Lager; Dept. 48-55, H. L. Kensinger.

Fifteen-year: Dept. 3-2, L. W. Turner; Dept. 6-4, Mary G. DiGregorio; Dept. 15-0, W. G. Rankin; Dept. 16-1, Sylvia T. DeMasi; Dept. 27, Jeanne C. Borges, J. K. Gaston, Helen M. Maisheff; Dept. 115, Carmel W. Sullivan.

Ten-year: Dept. 3-1, J. G. Williams; Dept. 6, H. R. Beckwith, L. I. Crum Jr., R. L. Fagan, J. E. Stengel, W. R. Stout; Dept. 25, Anthony Cammarata, J. B. Evans, A. J. Hatch, W. B. Thompson; Dept. 48-01, Helen P. Sunblade; Dept. 97-3, Sylvia Akers.

CORPORATE

Service emblems awarded in September.

Ten-year: Joan Armstrong.

Five-year: Marilyn McManus.

GD/ELECTRONICS

Twenty-year: Dept. 72-00, N. M. Reierson.

Ten-year: Dept. 33-00, J. M. Herring; Dept. 34-00, B. B. Palmer; Dept. 43-00, G. G. McCoy; Dept. 73-10, Vira F. Mellen.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Sept. 27 and Oct. 4.

Dept. 14-7, C. D. Duncan, $10; S. E. Weller, $53.40.

Dept. 42, R. K. Johnson, $40.

Dept. 91, J. B. Roisman, $37.40.

Dept. 101, H. Bryant and J. H. Hammer, joint award, $28.30 each.

Dept. 131, H. L. Gustafson and R. A. Richardson, joint award, $7.10 each.

Cost Improvement Proposals for the same periods.

J. M. Hardison, Dept. 15, and B. E. Jackson and J. F. Pearson, Dept. 97, joint proposal.

N. F. Davis, Dept. 91.

Rider-Driver

CONVAIR

RIDE WANTED—8 a.m. to 4:30 p.m. from Clairemont Drive & Morena Blvd. to Plant 1. Virginia Stillman, plant ext. 2355, or home phone, 273-4065.

RIDE WANTED—7:30 a.m. to 4:30 p.m., from 7400 block El Cajon Blvd. to Plant 1. Will consider ride to work only, if more convenient. Marie Davidson (Dept. 16-7), ext. 2366, home phone 466-7341.

Retirements

CONVAIR

ANTL—Lawrence C., Dept. 48-31. Seniority date Sept. 23, 1946, retirement effective Sept. 30.

BIEHN — Ethelbert H., Dept. 401-7. Seniority date Oct. 24, 1955, retirement effective Aug. 16.

BIEHN—Lydia E., Dept. 401-7. Seniority date Feb. 23, 1956, retirement effective Aug. 16.

BOWRING—Estes N. Dept. 14-5. Seniority date Aug. 15, 1951, retirement effective Sept. 27.

COLLINGWOOD—Melvin, Dept. 16-6. Seniority date Dec. 1, 1941, retirement effective Sept. 30.

CROSSLAND—Willie W., Dept. 146. Seniority date July 15, 1954, retirement effective Aug. 10.

ELVERSON — Mary M., Dept. 129. Seniority date Oct. 27, 1950, retirement effective Aug. 20.

FIELDS—Clifford, Dept. 25-2. Seniority date Nov. 1, 1950, retirement effective Sept. 28.

HILLMAN—Moody P., Dept. 215. Seniority date Aug. 20, 1953, retirement effective Sept. 9.

SCHWAB — George E., Dept. 48-72. Seniority date Feb. 16, 1955, retirement effective Aug. 29.

SWEET — Oscar, Dept. 3-1. Seniority date Aug. 18, 1953, retirement effective Aug. 6.

TORIBIO—Zacarias, Dept. 25-2. Seniority date June 19, 1952, retirement effective Sept. 28.

UNDERWOOD — LaNetta F., Dept. 129. Seniority date Aug. 6, 1951, retirement effective Aug. 23.

WEDEL—Ralph, Dept. 48-86. Seniority date May 10, 1951, retirement effective Oct. 4.

Personals

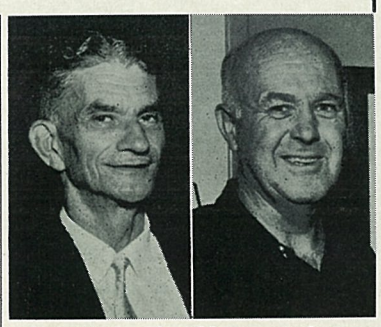
CONVAIR

We are most grateful for the expressions of sympathy, beautiful flowers, and the contribution made to St. James Fund, Scripps Hospital, in the name of my husband, Reginald L. Horne.

Ruby Horne and family

* * *

The family of Ray Hanson (ret.) wish to express their deep appreciation for the kind expressions of sympathy received at his passing.



Latest to receive 25-year service emblems at GD/Convair are Stewart I. Moore, Dept. 101, left, and Robert Buss, Dept. 171.

Club Planning Sports Night

GD/Convair Management Club members will turn their minds to ways of making the "all-American city" the all-American sports town as they consider what San Diego can do to promote big-time sports at their Oct. 24 meeting.

John Rohrbough, training specialist for the 11th Naval District, will lead discussion.

Spotlight speakers, representing major sports, will be Bob Burdick, director of publicity for the Chargers; Eddie Leishman, business manager of the Padres; Lyle Bond, Channel 8 sportscaster; Paul Runyan, local golf professional. Charger players Ron Mix and Earl Faison also have been invited.

The meeting will be held on the Thursday night date at the San Diego Athletic Club, 1250 Sixth St.

Social hour will be at 5:30 o'clock, dinner at 6:30, and program at 7.

Since the program will be of general interest, members are welcome to bring guests. Guest dinner price is $4; members, $2.75 each. Tickets now are on sale at all regular outlets within the plant.

L. G. Lawson and H. P. Williams are in charge of arrangements for quality control, sponsoring department. W. J. Martin, director of reliability, and G. A. Covington, manager of quality control, will act as hosts.

Send ESs, CIPs Through Mail

A new method of turning in Employee Suggestions and Cost Improvement Proposals has gone into effect at General Dynamics/Convair to reduce time and labor of collection.

Now, all ESs and CIPs must be sent through inter-plant mail to the cost reduction section instead of being deposited in ES/CIP boxes.

Vic Janusz, cost reduction section coordinator, explained that at least 8 hours a week has been required for pick-up of suggestions at locations throughout Plant 1, Rose Canyon, ramp.

Forms are still available from ES/CIP boxes and listing of awards will be posted on the boxes bi-weekly.

However, forms must now be mailed to Cost Reduction Section, Plant 1, Zone 23-30. Janusz will answer any questions regarding ESs and CIPs through exts. 1111 or 2225.

General Dynamics NEWS

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C-141 REVIEW — Air Force officials on recent tour of C-141 empennage production area at GD/Convair were briefed on status of program. Shown in photo are (from left) R. H. Gardner of Wright-Patterson AFB; C. S. Moore, Lockheed subcontract representative; Maj. R. L. Miner; James M. Adamson, GD/Convair C-141 program manager; Col. W. F. Rankin; Lt. Col. C. D. Craig; Col. M. B. Hammond, director of C-141 System Project Office. With backs to camera are Don Stewart, C-141 contract administrator, and N. P. Pearson, in charge of C-141 production at GD/Convair.

Cost Cuts, Improved Efficiency Follow Task Force Value Effort

One General Dynamics/Convair section has turned the value control spotlight on its own operations to come up with definite cuts in costs and improvement in efficiency.

Graphic reproduction people (Dept. 16-6), headed by H. B. Day, supervisor, formed a task force recently to see what they could do to streamline their own duties at less expense. Day's section is one of the first groups in the division to request value control training for its own specific operations, said H. P. Williams, manager of value control.

Best ideas generated by the four teams were combined into a new paperwork system which is now in use. According to Day, a revision of work and job sheets, which are used to record operations performed and all time spent on jobs going through graphic reproduction, will save at least $6,500 a year.

In addition to actual money savings, the new forms give a great deal more information on actual cost outlay for each job and more realistic readings on individual performance. Workers raised their individual performance standards more than six per cent in the first two weeks!

Almost 14,000 work sheets and 25,000 job sheets are used in the section each year. Just the filling in alone of items listed on the work sheets took over 1,500 man-hours. Total time piled up in completing job sheets was nearly 2,000 hours.

Then, said Day, when forms reached the billing clerks, a great deal more time was necessary to pinpoint correct information and charges.

The new streamlined forms prelist all possible operations and need only a check mark or operator's initial to give the necessary information. Time spent on each has been cut to a minimum. Now it only takes 90 seconds to fill out a job sheet instead of the more than 8 minutes required on the former type, and a work sheet can be completed in 135 seconds instead of the previous 7 minutes.

The new paperwork system will give graphic reproduction a complete case history of each job, said Day, so that charges to customers can be figured accurately and quickly. He said that probably as much as 5 per cent of chargeable costs were lost in the complexity of the old system.

And value control has not ended for graphic reproduction.

The people who took the formal value control training are serving as value control coordinators in the department and at least two brain storming sessions are held each week.

"These sessions almost always result in new and better ways of doing our work," Day emphasized.

Graphic reproduction assistant supervisors and leadmen and women taking the special value control course the end of August were: J. A. Dempsey, D. Q. Henry, Elsie Rall, R. D. Johnson, Emmett Capossere, Glenn Robinson, Edwin Kish, Lawrence Elmstrom, Dolores Ries, W. F. Strausberg, Alfred Nybo, Florence Lindgard, Millie Thomas, and Ara Toon.

Williams reminds supervisors that similar task forces can be formed for value control indoctrination upon request.

Interceptor Meeting Hosted at GD/Convair

(Continued from Page 1)

month's meeting following a welcoming address by GD/Convair President J. H. Famme.

Military commands represented included Ogden Air Materiel Area; Warner-Robbins Air Materiel Area; San Antonio Air Materiel Area; ASD at Wright-Patterson; Air Defense Command, Colorado Springs; Air Training Command, Amarillo, Texas; Holloman AFB, N.M.; Tyndall AFB, Fla. Officials from Royal Canadian Air Force also were present.

Industry delegates came from Hughes Aircraft Co. and McDonnell Aircraft Co. GD/Convair personnel were from engineering, service parts, and F-102/F-106 project office.

Tentatively, the next meeting will be in November at Hughes Missile Plant at Tucson, Ariz.

AF Team Makes C-141 Inspection

A contingent of top Air Force officials connected with development and direction of the C-141 Starlifter program were at General Dynamics/Convair the first week of this month to review the division's part in the program.

Col. M. B. Hammond, director of the C-141 System Project Office, Wright-Patterson AFB, Ohio, headed the group. Others at the San Diego plant for on-site inspection were Col. W. F. Rankin, Lt. Col. C. D. Craig, Maj. R. L. Miner, and R. H. Gardner.

J. M. Adamson, GD/Convair C-141 program manager, with other key staff members, conducted a tour of the C-141 empennage production area. Discussions dealt with all phases of GD/Convair's production progress, including scheduling, tooling, transportation, and handling.

Colonel Hammond's visit coincided with the loading and shipment of the seventh empennage, last of GD/Convair's initial contract. The unit is due to arrive this week at Lockheed-Georgia Co.'s Marietta plant.

Colonel Hammond, who witnessed one of the recent matings there, expressed himself as pleased with the smooth joining of the GD/Convair-built empennage to the fuselage. Mating was accomplished in less than an hour and a half.

Four articles, the first three flight and the static test, have already been mated.

Confidence in Future Expressed by Horne

(Continued from Page 1)

engineer for Ranger, who heads the new Management Club as president, received the club charter from John Cristoph of Lockheed - Sunnyvale and National Management Association president.

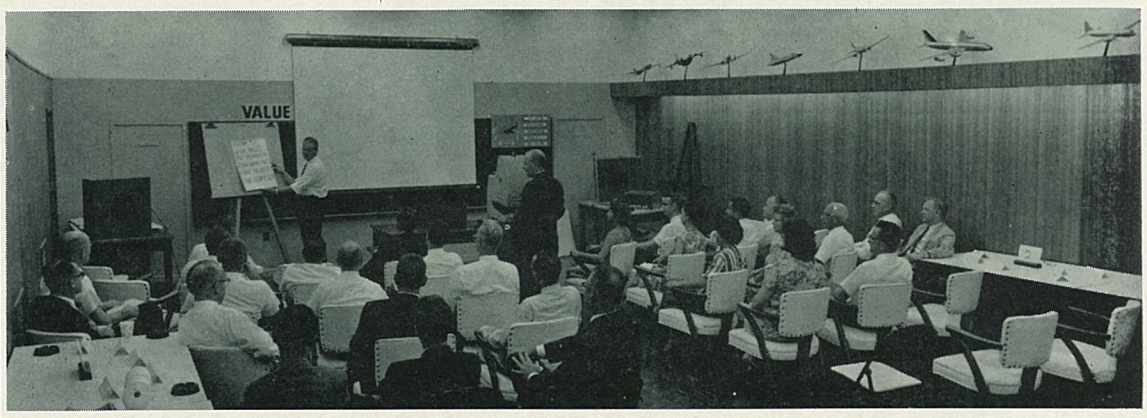
J. J. Janda of GD/Astronautics and NMA Zone A director installed first officers: Graybill; C. R. McGehee, first vice president; T. E. Morris, second vice president; George Oatman, secretary; L. A. DiVincenzo, treasurer; and board members Rex Brouillard, N. J. Barnes, and C. E. Murdock.

Other NMA officials present were John Allen of Douglas Aircraft Co., NMA Zone A vice president; J. V. Kappler, NMA Zone A manager; Reese Graves of GD/Astro, NMA director-elect.

Special guests from within the Corporation were H. L. Richardson, Corporate vice president; T. R. Worthy, GD/Pomona director of industrial relations; J. J. McCormick, GD/Pomona Management Club president; Ralph Bauman, GD/Astro Management Club president; and Ralph Montgomery, president of GD/Convair Management Club.

Riders Camp Out At Los Caballos

CRA Riding Club members had two outings to Los Caballos Campgrounds this month. Several horsemen camped there Oct. 5 and went on into Julian the next day to take part in the annual Apple Festival parade. The Convair group scheduled another weekend campout at the site last Saturday and Sunday, Oct. 12-13.



TASK FORCE — J. A. Dempsey, GD/Convair graphic reproduction assistant supervisor, gives team report at conclusion of recent value control training arranged specifically for section personnel. Wayne Turner of educational services is at projector.

Performance Award Goes to GD/E Man

Roy G. Bond of GD/Electronics-San Diego has received the first Individual Performance Award to be given anyone in the San Diego area by International Headquarters of the Data Processing Management Association.

Bond, GD/E data processing supervisor, is a past president of the San Diego Chapter, past chairman of the Southwestern Division. He presently serves as an international director of DPMA.

Less than 500 of the association's 15,000 members have qualified for the award which requires at least five years' activity in DPMA, and is based on points earned for meritorious service.

Technical Meeting to Hear General Dynamics Executives

General Dynamics executives from West Coast divisions and Corporate office will have active parts as speakers and panel moderators during the Joint Technical Conference at Disneyland Hotel, Anaheim, Nov. 7-8.

T. F. Fore, GD/Pomona's engineering chief of reliability, is chairman for the conference sponsored by American Institute of Aeronautics and Astronautics, American Society of Mechnical Engineers, Southern California Section of Society of Automotive Engineers, National Security Industrial Association, and American Society for Quality Control.

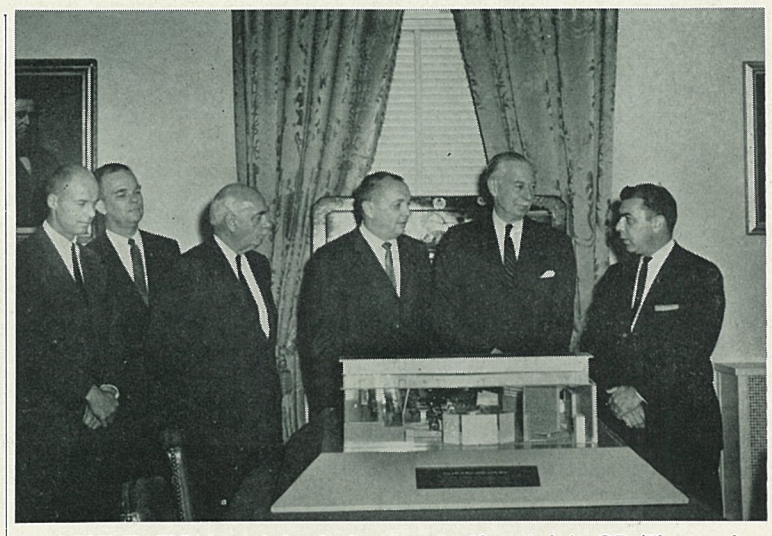
C. F. Horne, GD/Pomona president, will be moderator for the concluding session Nov. 8 when the conference theme, "How to Improve Technical Teamwork," will be discussed. Members of the discussion panel include J. J. Riordan, director, technical logistics, data and information, Department of Defense; Dr. Eric Neubert, associate deputy director, Marshall Space Flight Center; Prof. Gayle W. McElrath, University of Minnesota; Dr. W. F. Ballhaus, executive vice president, Northrop Corp.; E. J. Lancaster, president, American Society for Quality Control.

C. W. Frick, GD/Convair vice president-engineering, will speak Nov. 7 at the design and development session. He will discuss "Improving Design Interfaces on Major Weapon Systems."

J. Y. McClure, General Dynamics Corporation director of reliability, quality control, value control, will be moderator of Nov. 8 session on testing.

E. D. Bryant, GD/Astronautics vice president, operations, will speak Nov. 8 at session on logistics. Title of his talk is "Industry Views the Modern Logistics Problem."

Other conference highlights will be keynote speech by D. J. Haughton, president, Lockheed Aircraft Corporation, and talks by Maj. Gen. F. H. Britton, deputy commander, U.S. Army Material Command, RAdm. Levering Smith, technical director, special projects office, Bureau of Naval Weapons.



PRESENTATION — John L. Lombardo (far right), GD/Electronics-SD general manager, heads contingent of GD/E officials at Washington, D.C., ceremony when GD/E scale model of Project Mercury Operations Room was turned over to Smithsonion Institution. From left are Payne B. Johnson, GD/E manager of communication; Arch H. Wisdom, GD/E manager of data products research and engineering; Philip S. Hopkins, National Air Museum director; Congressman Bob Wilson of SD; Dr. Leonard Carmichael, Smithsonian secretary; and Lombardo.



S-C 4020 "ANIMATED" — Payne Johnson, GD/E manager of communication, explains S-C 4020 Microfilm Recorder to Rene Sheret and Bill Clark of Frye & Smith's art division before they set to work designing animated cartoons for film about high-speed electronic system.

Wide Military and Commercial Use Possible For Test Stands

First-article demonstration of the General Dynamics/Convair test stand for checkout of F-106 pneumatic components has proved that the simple and rugged stand can live up to all claims.

Representatives from San Antonio Air Materiel Area and Aerospace Systems Division, Wright-Patterson AFB, Ohio, expressed satisfaction on the performance and versatility of the new concept of stand developed at GD/Convair for the Air Force under an F-106 contract.

The test stand for checkout of low pressure pneumatic components, such as valves, sensors, actuators, differential pressure switches, and calibration of thermostats, is designed for testing in the field and at isolated bases. Heretofore, all components had to be sent, sometimes far distances, to one of the AF overhaul depots.

The 16 stands, developed and built at GD/Convair during the last year, are expected to go late this year to AF squadrons equipped with F-106s, following minor revisions stemming from the recent demonstration.

However, the stand may be easily adapted for checkout of similar pneumatic components of many other kinds of aircraft, both military and commercial, pointed out J. D. Chapman, GD/Convair group engineer, mechanical and support systems.

Queries concerning the application of the test stand to military aircraft other than the F-106 already have been received from several agencies.

At San Diego for the first-article checkout were Hugo H. Stein Jr. of SAAMA (SANERM) and J. F. O'Brien, SAAMA (SANCTN). T. C. Ning, ASD representative, observed a portion of the demonstration which extended over a ten-day period. During this time each of 26 different components went through the step-by-step test procedure.

SAAMA representatives are expected in-plant the middle of this month for final acceptance evaluation.

Results of environmental testing completed this summer also are now in the hands of SAAMA officials. During these tests the stand was submitted to temperatures ranging from minus 80 degrees to plus 160 degrees F. for high and low temperature storage; operational temperatures from plus 32 to 125 degrees F.; relative humidities of 95 to 100 per cent at 85 degrees F.; and life cycle test of the stand's systems.

GD/Convair design engineers assigned to the project believe that the new-type stand is now ready for successful field level use by the Air Force.

Navy Squadron Flying Convair Ships Honored

Fleet Tactical Support Squadron One, one of the U. S. Navy's major transport squadrons, located at Naval Air Station, Patuxent, Md., continues to pile up safety records.

VR-1, the Navy's oldest transport squadron which flies Convair C-131Fs (formerly designated R4Ys) has won the COMNAVAIRLANT Safety Citation for 1963, reports Don Weaver, GD/Convair field service representative who has been with the squadron six years.

The award, made by Commander Naval Air Forces, U. S. Atlantic Fleet, was presented in recognition of the squadron's "accident free" record during the past fiscal year.

During that time VR-1 flew 14,365 hours in transporting 52,136 passengers, 1,993 tons of cargo and 60 tons of mail, a total of well over 2 million miles without an accident.

This is the third consecutive year in which VR-1 has earned this citation. During the three-year period the squadron has flown 42,657 aircraft hours and nearly 6 million miles without an aircraft accident.

Capt. Paul D. Halpin, USN, is commanding officer of the Fleet Tactical Support Squadron One, which flies C-118Bs and C-130s in addition to the C-131Fs.

Six From GD/E 'Observe' Navy

Six General Dynamics/Electronics-San Diego men have gone to sea during the last month to observe the overall picture of operation and maintenance of electronic equipment aboard Naval vessels.

The trips were made under the Navy's Design-for-Maintenance Environmental Orientation Program established by BUWEPS Fleet Readiness Representative, Pacific.

The program is sponsored by the Navy to familiarize design personnel of BUWEPS contractors with the operating environments and maintenance aspects of weapon systems.

J. H. Thompson, GD/E manager of operations, and K. W. Strowig, manager of product test, spent Sept. 17-19 aboard the USS Ticonderoga while W. H. Jones, L. R. Crump, A. F. Casey, and J. T. Stebbins, all of GD/E Plant 2, observed a task group ASW exercise aboard the USS Bennington Sept. 30-Oct. 4.

More such trips are planned for GD/E personnel whenever possible, said John N. Mac Innes, GD/E requirements engineer.

Thousands Learn About S-C 4020 Through Watching 12-Minute Film

A high-speed computer recorder, the S-C 4020 designed and built by General Dynamics/Electronics-San Diego, has the leading role in a motion picture film which will be viewed by more than 15,000 people by the end of the year.

The 12-minute film, "The Mark of Man," traces in entertaining fashion development of man's written communication down through the ages. A series of cartoon characters lead the viewer through the entire history of man making his mark, from drawings on cave walls to ultimate performance of GD/E's revolutionary electronic machine —a system which translates computer codes into drawings with electron beams.

According to Payne Johnson, GD/E manager of communication, the film not only fulfills its primary purpose as a useful sales tool, but attracts attention from the general public.

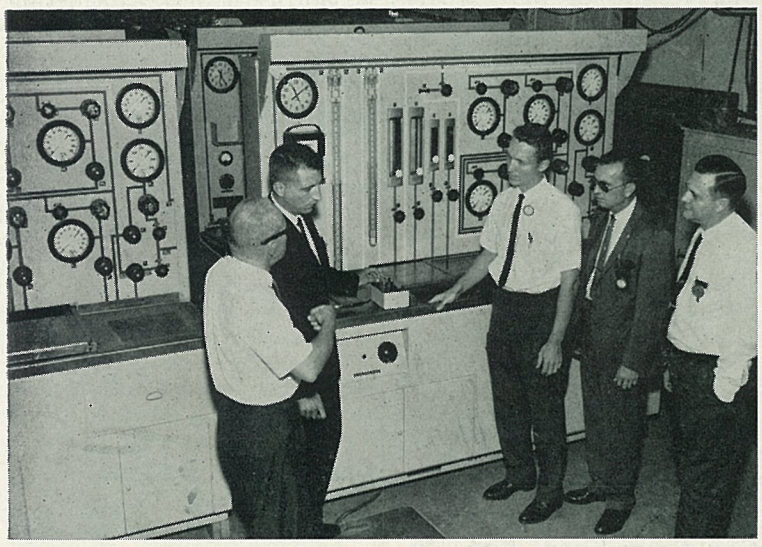
Art work was accomplished by Frye & Smith Image Division's Art Studio under direction of Rene Sheret, art director. Les Hedgecock and Bill Carter of GD/Convair's motion picture section did the actual photographing of the S-C 4020 in action at GD/E's Plant 2 facility. Hedgecock also edited the film.

"The Mark of Man" is available for showing to any interested group, said Johnson.

Magazine Features GD/Astro Material

Articles, photographs, drawings and illustrations from GD/Astronautics communication department fill more than half of the September issue of Omniart.

Omniart is the monthly publication of the San Diego Chapter, American Institute of Architects. Articles are by C. T. Newton, Astro director of communication, and Stan Hodge, manager of art direction.



ONCE-OVER—SAAMA service engineer Hugo H. Stein Jr., second from left, observes progress on AF-requested revisions of test stand for checkout of F-106 components during recent visit to GD/Convair. Others are B. F. Ferguson, F-102/F-106 project engineer; J. E. Johnson and J. G. Polk, design engineers; J. D. Chapman, group engineer.

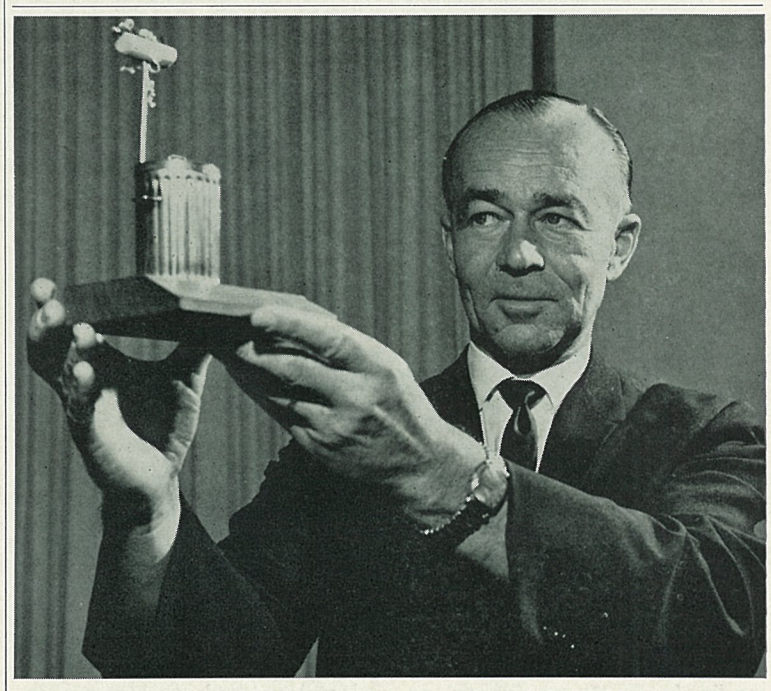
Housekeeping 'Prize' Devised

"Reverse English" on a traveling trophy is inspiring GD/Astronautics departments at Plant 19 in their housekeeping efforts these days.

The award is presented monthly at a staff meeting conducted by W. L. VanHorn, vice president and program director—Atlas weapon systems, to the department manager whose group fares worst in a surprise housekeeping inspection.

The winner is "honored" by displaying the award — a miniature trash can with push broom — prominently in his area until it is "won" from him at a later inspection.

Each month the inspection team is headed by a different Plant 19 executive, assisted by permanent team members Frank Andrews, Dept. 365-1, and Safety Engineer Rex Andrew.



PLANT 19 "HONORS" — Vice President W. L. VanHorn eyes "award" presented each month to department at GD/Astro's Plant 19 which fares least well in housekeeping inspection.



WATER BALLET — Jim Carter, ARA Water Ski Club president, demonstrates scenes to be repeated at club's trip Oct. 19-20 to Blythe. Group now offers free instruction to members. Similar skiing organization is operated for GD/Convair, GD/E employees.—Photo by Ken Rinker, Astro Lens.

Value Control Mgrs. to Meet

Value control managers of two General Dynamics divisions are taking an active part in today's (Oct. 16) 1963 colloquium of the Los Angeles Chapter of Society of American Value Engineers.

"The Economics of Product Effectiveness" is main theme of the one-day meeting at Marina Hotel in Los Angeles.

E. D. Heller, GD/Astro value control manager, as keynote speaker will discuss some of the subjective aspects of present-day technical and industrial life as he develops the topic, "Some Social Aspects of Value Engineering."

Heller is Southwest Region director of the national SAVE organization.

H. P. Williams, representing the San Diego Chapter of SAVE and GD/Convair value control manager, will chair the afternoon session on Value Engineering Training Techniques.

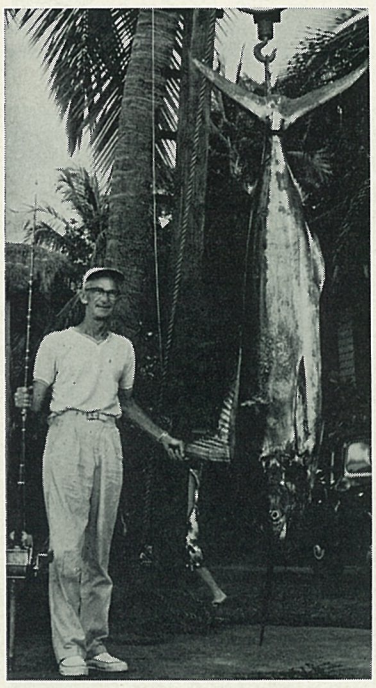
At this session E. A. Lindem of GD/Astro educational services will introduce new techniques for management orientation, seminar training, and programmed instruction. Other GD men also attended.

Overpass Entrance To Bldg. 5 Is Closed

Access to the third floor of Bldg. 5 at GD/Convair Plant 1 from the Bldg. 1 overpass has been closed.

Use of the stairway from the overpass to the third floor and the doorway at the top are limited to emergencies only, said D. C. Wilkens Jr., director of industrial relations.

Approved entrances to the area are from the Bldg. 19 overpass; at the west end of the building through entrance at Col. V-9; and on the north side of the building through Col. K-14 entrance.



PRIZE CATCH—H. S. Bowles of GD/Astro Dept. 480-0, formerly of Convair, reeled in 200-lb. marlin in a recent fishing excursion off island of Hawaii. He didn't bring it home!

Refreshments Free For Costume Party

Witches, black cats, goblins and what-have-you will frolic on skates Oct. 31 when the Astro-Blades hold their annual Halloween costume party at the Mission Valley Ice Plaza.

Festivities get under way at 6:30 p.m. and include games on ice, prizes for best costumes, etc. Refreshments will be free.

Special discount tickets are still available at employee services offices at Astro, GD/Convair and GD/Electronics which save skaters 25 cents at each club skating session.

Filloon Named To New Post

Appointment of Harlon D. Filloon as director of cost and value control at General Dynamics/Pomona has been announced by T. L. McPherson, controller.

The position is a new one, established to provide coordination of various existing cost reduction programs, to develop new programs where necessary and to document and report results to company management and defense agencies.

Filloon transferred to Pomona Division Oct. 1 from the Corporate Office. His 20 years of experience with General Dynamics include executive assignments in several divisions as well as Corporate Office.

Educated at Cal Tech and University of California, Filloon joined the Company at Convair, held executive positions there and at GD/Pomona for a number of years, and also with GD/Electronics in Rochester. Among other professional societies, he is a member of the Electronic Industries Association.

Astro-Blades Offer Ice Hockey Tickets

The Astro-Blades, ARA-CRA-sponsored ice skating activity, are offering reduced-rate tickets for three professional ice hockey games to be played by the Los Angeles Blades in Los Angeles.

Regular $3.50 tickets may be obtained for $3.25 with the club paying the difference. Reservations may be made at employee services offices.

The first game is Nov. 2 and reservations must be made by Friday, Oct. 25. A charter bus may be operated to the game, if sufficient interest is shown. Contact Barbara Gilliland, club president, ext. 4041, Plant 71.

Astro Lens Planning Model Shoot Oct. 20

A regular Astro Lens model shoot has been set for 7:30 p.m. Sunday (Oct. 20) at the Photo Arts Bldg., Balboa Park, according to Commissioner Ken Rinker.

Models will be Paula Arciaga of Dept. 336-4, a native of Hawaii, and Sherry Harmon, niece of Frances Darr of Dept. 521-6.

Members and guests are invited to turn out with cameras, tripods and film.

Fall Gardening Show Date Set

Commissioners of the joint ARA-CRA Garden Club have announced plans for the group's annual Fall Show to be held Sunday, Nov. 3, in Balboa Park's Floral Assoc. Bldg.

Included in the judging will be four chrysanthemum divisions, arrangements, corsages, a children's division, and roses (single bloom entries) in eight color classes.

Entries will be accepted from any GD/E, GD/Convair or GD/Astro employee or dependent between 7 and 11 a.m. on the day of the show. Judging will begin at 11 a.m., and the show will be open to the public free of charge from 1 to 6 p.m.

ARA Commissioner Everett Henderson and Henry Boyd, acting CRA commissioner, are coordinating arrangements with the aid of club members.

Son Attending 'Sea' University

Tom Langpap, 18, son of GD/Convair's Vernon Langpap (Dept. 6), will have the fun of studying while traveling around the world as he embarks this month on the University of the Seven Seas.

Tom has received a $1,000 scholarship by virtue of his high scholarship record. This defrays approximately half of the cost of the four-month study cruise.

The ship, which carries 300 students and 35 instructors, leaves New York City Oct. 22 and docks in San Diego Feb. 9. It will sail across the Atlantic to Spain, around the Mediterranean coastline, through the Suez Canal, touching at Asiatic ports before reaching Hong Kong and heading homeward.

Tom, a graduate of Mt. Miguel High School, had already enrolled in the engineering department at University of Redlands on a scholarship before he learned of his current award. He will re-enter Redlands at the beginning of the spring semester.

Schuele to Speak For Purdue Alumni

Alumni of Purdue University at General Dynamics divisions in the San Diego area are invited to hear Karl F. Schuele, GD/Astronautics assistant to vice president for advance product planning, speak at the Oct. 18 alumni club meeting.

Schuele's topic will be "Future Space Concepts."

The meeting will be at the Fiesta Spa Health Clubroom, 3040 Clairemont Drive, across from the Clairemont Quad. Cocktail and social hour starts at 6 p.m.; dinner at 7; and program at 8. Wives are welcome.

For reservations call Ralph McIntire of GD/Astro support engineering, president of the San Diego club, at his home phone, 276-4987.

50-Year Pilot

Harold Laird's Brother, Pioneer In Aviation, Pays Convair Visit

Two brothers, whose connection with aircraft spans half a century, met at General Dynamics/Convair last month to view the most modern and speediest craft of them all.

Harold Laird, long-time GD/Convair man recently transferred to GD/Astro, guided his brother E. M. "Matty" Laird, pioneer in the development of the "flying machine," on a tour of the company and a flight in a Convair 990—his first jet ride.

"Matty" Laird, who taught himself to fly back in the days of the Wright Brothers, was on the West Coast to gather with pioneer pilots who had flown before Dec. 17, 1916, at the Early Bird Reunion in Long Beach, Calif. He received a plaque marking the 50th anniversary of his first flight in his own plane on Sept. 15, 1913.

Delving deep into his memories, he recalled that his long-time interest in flying was sparked in 1910 when he saw a flight of one of the first Wright Co. planes in Chicago.

His imagination drove him to try it himself. He started with a bicycle-glider—stubby wings attached to a bicycle body. To take off, he pedalled as fast as he could down the street against the wind and over a ramp to become airborne for 20 or 30 feet.

This taste of "flying" only whetted his determination to really get off the ground. The next three years he spent all the time he could snatch from his bank clerk's job to design and build a monoplane. (He still has the four-cylinder, 12 horsepower engine built from auto and motorcycle parts which powered the craft.)

After many trial taxi runs on Chicago's old Cicero Field, he decided he was ready to try a flight in the fall of 1913. On that September day he pushed on the gas and was breathless with surprise when the plane actually lifted off the ground—all of some 15 feet. That first flight ended in a pancake finish, upside down, but with little damage to either pilot or plane. Most important, the propeller was intact.

Laird was "hooked." Two years later he earned $300 for his first exhibition flight at a Labor Day celebration and never returned to his $75-a-month clerk's job.

His career paralleled the development of aircraft in this country as he went on designing and building more advanced planes. His bi-plane exhibition plane, in which he was one of the first daredevils to loop the loop, is in the Ford Museum at Dearborn, Mich.

He was an instructor for the Army Signal Corps during the first World War and afterwards formed his own company, the E. M. Laird Co.—later known as the E. M. Laird Airplane Co. He started with two-passenger civilian planes, built some of the first commercial planes, training planes with OX-5 engines (which Reuben Fleet flight-tested for the Army), airmail planes and racing planes. The Laird Solution won the first Thompson race in 1930 with a speed of 201.99 mph, and the Super Solution was flown by Jimmie Doolittle to win the Bendix Race the next year with transcontinental record of 11 hrs., 15 min.

Younger brother Harold was trained in the business by his brother for 13 years before first joining Convair in 1936. He joined GD/Convair flight inspection in 1941 and was assistant supervisor before transferring to Astro last month.

Matty Laird wound up his many years with the industry by serving as vice president in charge of LaPorte Corporation's aviation division during World War II. At that time the LaPorte company was building vertical fins for Convair B-24s.

He retired in 1951 to make his home in Florida.



AVIATION PIONEERS—E. M. "Matty" Laird (right), who made his first flight in his own plane in 1913, is guest of brother Harold, long-time GD/Convair inspector, at San Diego where Matty had first jet ride in Convair 990.

Dynamics Children To Act in 'Wizard'

Astro Players will sponsor a special musical version of the "Wizard of Oz" featuring several sons and daughters of General Dynamics employees at 8 p.m. Oct. 26 in the ARA Clubhouse.

The show is free to the public.

Featured will be Blanch-Mont Dance Studio pupils, including Shelley Benson, 7, daughter of E. E. Benson of GD/Convair, Linda, 15, Barbara, 14, and Timmy, 7, Ady, children of GD/General Atomic's Robert G. Ady.

Salvage Schedule For Four Sats. Set

Salvage yard schedule for the next four Saturdays at GD/Convair and GD/Astro sites is:

GD/Astro—Oct. 19, Nov. 2.

GD/Convair—Oct. 26, Nov. 9.

SD Weight Engineers Will Host Visitors

San Diego Chapter, Society of Aeronautical Weight Engineers, will host a joint meeting with the Los Angeles Chapter Nov. 2 at the OceanHouse, San Diego.

A "happy hour" at 7 p.m. will be followed by a Hawaiian luau at 8 and dancing from 9 p.m.

Information concerning tickets is available through J. E. Mullen, ext. 2963 at GD/Astro.

State Will Return To Standard Time

General Dynamics people in California will gain the hour they "lost" this spring as the state returns to standard time on Sunday (Oct. 27).

Clocks will be turned back an hour at 2 a.m. of that day.

GD/E SENSOR, DATA OPERATIONS NOW UNDER THOMPSON

In new appointments announced this month within the organization of General Dynamics/Electronics-San Diego, J. H. Thompson, manager of operations, has assumed the responsibility of both sensor and data products operations.

In making the appointment, General Manager John L. Lombardo said that R. E. Lawson will remain in charge of manufacturing operations for the GD/E Plant 2 data products facility. He reports to Thompson.

Thompson was manager of manufacturing before being named manager of operations at GD/E Plant 1 in May of 1962. He first joined the company at the former Stromberg-Carlson division in Rochester in 1959 and was assistant to the vice president for military products at the time of his transfer to GD/Electronics at San Diego in 1961.

Other shifts within the operations department include the appointment of A. E. Degler, former GD/E plant engineer, as manager of plant engineering for both sensor and data products facilities.

He also reports to Thompson.

Degler joined Stromberg-Carlson at Rochester in 1954 and transferred to the former Stromberg-Carlson facility at San Diego in May of 1956 as production engineer.

Degler holds a BS in business administration and industrial engineering from the University of Rochester and took advanced courses in architectural drawing at the Rochester Institute of Technology and in civil engineering at the University of Miami.

H. C. Murray will be in charge of facilities control for the Plant 1 sensor products facility, reporting to Degler.

* * *

Three new appointments became effective last month in GD/E's research and engineering organization at the Plant 1 sensor products facility, according to J. L. Brooks, manager of sensor products research and engineering.

M. F. Leeds has been named manager of engineering section; M. L. Tucker, manager of advanced engineering section; and D. A. Graybill is project engineer for Ranger radar.

Horne Speaker At Spares Meet

"Spares — An Oft-Overlooked Subject," was the topic of C. F. Horne, GD/Pomona president, as he opened the three-day meeting of the Electronic Industries Association Spare Parts Committee in San Diego Oct. 1-3.

Horne, who is serving his second term as EIA president, pointed out that the spares problem today, especially for prime contractors, is imperatively significant because industry is dealing in short product quantities, long delivery periods, high design change programs, and no longer maintains high inventory stores.

"In addition," he continued, "we have entered the era of competitive procurement of spares since the government is striving for the highest quality at the lowest competitive cost."

He charged the EIA Spare Parts Committee with its responsibility to make management aware of the importance of spares and spares programming; to emphasize the cardinal tenet of spares—that it is essential to maintain the usefulness of the product once it is delivered to the customer; and to grapple with new problems posed by government contracting.

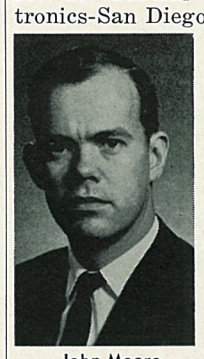
General Dynamics men attending included F. M. Shulze of GD/Pomona; C. B. Robinson and Jack Foster of GD/Convair; M. D. Hazel and T. A. Powell of GD/Electronics-San Diego; and George H. Haupt, GD/Electronics-Rochester.



CON-TRIB "THANKS" — Paul C. Pearce (center), GD/Convair Dept. 171 and IAM representative on GD/Convair Employees' Con-Trib-Club Committee, accepts certificate of appreciation from Edward S. Hope, chairman of American Cancer Society Crusade in SD County. Mrs. Pearce accompanied husband to recent meeting of Cancer Society.

Moore Elected By Bar Chapter

John A. Moore, division counsel at General Dynamics/Electronics-San Diego, has been elected president of the San Diego Chapter of the Federal Bar Association.



John Moore

Moore joined the former Stromberg-Carlson division in San Diego as attorney in July, 1960, and transferred to the GD/Electronics organization in late 1961 as legal counsel. He has been GD/E division counsel since December of last year.

Before joining the company, Moore was a member of the program planning and development staff for Chrysler Corp.'s Missile Division, Detroit, Mich.

GD/E Man Gets Award For Graduate Study

William C. Slagle of General Dynamics/Electronics - San Diego will work toward his doctorate during the current school year on a General Dynamics Graduate Award.

Slagle, data products systems engineer at GD/E Plant 2, is the first GD/Electronics man to receive the $1,000 award for graduate study. He will be on leave of absence from the division while he continues his studies at Case Institute of Technology, Cleveland, Ohio.

A native of Austin, Texas, Slagle joined the original Stromberg-Carlson division in San Diego in the fall of 1957 as electronic engineer. He was transferred to GD/Electronics upon its formation.

He holds BS and MS degrees from Texas Technological College and had done advanced work at the Alexander Hamilton Institute, New York.

Fire Dept. Contest Results Not Known

Results of GD/Convair fire department's annual safety and queen contest had not been determined by presstime. They will be announced in the next issue of General Dynamics NEWS.

Fire Chief D. D. Dimmitt said the several thousand ballots cast in the "Miss Torch" race were still being counted. Three GD/Convair and two GD/Electronics girls were in the running for the crown.

During the first week of the 1963 safety contest, over 1,000 calls came into the fire department for correct answers to questions which were asked throughout the plant. Perpetual trophy will go to top-scoring department.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BASEBALL — Convair Industrial League team vs. Schrock Construction, University Heights, 1 p.m.

BASKETBALL — List teams now for plant "slow break" tourney with Pete Beyrer, ext. 1245, Plant 1.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master points night fourth Wednesday.

CAMERA CLUB—Joint CRA-ARA model shoot Oct. 20, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Meeting tomorrow (Oct. 17), 7:30 p.m., Convair executive dining room.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA Fall Flower Show Nov. 3, Floral Association Bldg. Open to public 1-6 p.m.

GLIDER CLUB — Meetings every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF—Entries open Oct. 17-25 for annual Turkey Sweepstakes to be Nov. 9-10, Coronado course. Call ext. 1705, Plant 1.

GUN CLUB—Enter big game bags at all GD employee services outlets for annual contest drawing.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza 6:30-8 p.m. CRA-ARA Halloween party Oct. 31.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children, 25c.

PISTOL CLUB—Regular shoot Sunday (Oct. 27), 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting tomorrow night (Oct. 17), 8 p.m., Harbor Drive headquarters.

ROAD RUNNERS — Meeting tomorrow (Oct. 17). 7:30 p.m., Gillespie Field Clubhouse.

SOLO FLYERS — Ground school classes Thursday nights, 7:30 p.m., Jim's Air Service, Lindbergh Field.

SPORTS CAR CLUB — Installation dinner-dance Oct. 26, Gillespie Field Clubhouse.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 2701, Jack Loos, ext. 2456, both Plant 1.

'Slow Break' League Being Organized

Organization of teams for a combined GD/Convair and GD/E "slow break" basketball plant league is now under way.

Pete Beyrer of CRA office is accepting entries of teams at ext. 1245, Plant 1. He said that teams may be listed up to Nov. 15.

League play probably will start around the first of December. Winning team in the annual plant tourney will receive trophies.

GD/E Wives Gather For Lunch Meeting

General Dynamics/Electronics wives gathered for their first fall luncheon at Bali Hai's fashion day Oct. 10.

Mrs. John L. Lombardo and Mrs. Robert Bottoms were co-hostesses for the 1 o'clock affair.

Luncheons are held the second Thursday of each month with all wives of GD/E employees in San Diego invited.

Sports & Recreation

Road Runners' Exhibit Wins

CRA Road Runners' prize-winning exhibit continued to win awards as it took second place in the costume parade at the Border District Rally of Travel Trailer Clubs of America at Del Mar last month.

The club's miniature trailer drawn by a blue crepe paper "road runner" was top entry at last year's rally.

Fifty-four members and guests of the CRA group saw Ruth Peterson, Road Runner parade chairman, accept the trophy from Del Mar's Mayor Victor I. Koss.

Boots Lathrum, wife of GD/Convair's Rolland Lathrum, had concocted the "craziest" hat to win first prize in the crazy hat parade. Mrs. Lathrum's eye-catching chapeau was a disposable foil skillet decorated with kitchen utensils and topped off with potholders dangling from the handle.

Joe Sopko and Bill Branch won door prizes at the Saturday night mass potluck for which Iris Scholl and Agnes Branch were chairmen for the CRA club.

Tillie Sopko and Mrs. Peterson entered handmade quilts and crocheted articles in the rally's hobby show.

Road Runners will meet tomorrow night (Oct. 17) at Gillespie Field Clubhouse at 7:30 p.m. for their usual business meeting and social hour.

Bob Chillo Succeeds Lou Barnes as Head Of Sports Car Club

Bob Chillo of GD/Convair Dept. 6 is new president of the CRA Sports Car Club as the result of Oct. 2 elections.

He succeeds Lou Barnes of GD/E who headed the group during the current year.

Other officers, all from Dept. 6, are Charles Mohr, vice president; Mary Lou Stewart, secretary; and Bob Hayward, treasurer. Judicial board members are Charles Backus, Clark Kerr, Vern Mathews, Jim Stewart, Fred Thatcher, and Sid Weiner.

The new slate will be formally installed at a dinner-dance to be held Oct. 26 at Gillespie Field Clubhouse.

Eloise Riggs, Virginia Weiner, and Grace Wright, as committee in charge of arrangements, have planned a catered dinner with all the trimmings, followed by entertainment and dancing.

Eight Threesomes Play Mission Bay

Eight threesomes of General Dynamics lady golfers competed in the Oct. 5 tourney of the GD Women's Golf Club over Mission Bay golf course.

Mary Ransom, club president, had low score and Stevie Ericson a thrill when she aced the 15th hole.

Monthly tournaments are scheduled the second Saturday of every month from now on with the next one set for Nov. 9. Plans for future activities will be laid at the combined social and business meeting tomorrow evening (Oct. 17).

Tickets to Chargers Sold at Discount

A limited number of desirable seats for the next Chargers home game are now on sale at GD/Convair employee services, Bldg. 32, Plant 1, at discount prices.

Regular $4 tickets to the Oct. 27 game with Oakland can be purchased for $3. Deadline for sales is next Wednesday, Oct. 23.

Golf Sweepstakes Set For Coronado

Golfers at GD/Convair and GD/Electronics can begin signing tomorrow (Oct. 17) for the annual CRA Turkey Sweepstakes tourney.

Entries will be accepted until next Friday (Oct. 25) at ext. 1705, Plant 1, said Commissioner Ken Wulfemeyer.

Tournament will be Nov. 9 and 10 at the Coronado course. Winners of each flight will get turkeys.

Busch Attends British Talks

Karl Busch of GD/Convair Dept. 16 and long-time spearheader of model railroad activities represented the Pacific Coast Region of National Model Railroad Association at the annual British convention last month.

Busch attended the British Region of NMRA meeting at Folkstone, England, Sept. 20-22 as official delegate of the Pacific Coast Region and spoke on the activities and overall program of the West Coast modeling group.

Highlight of the British convention was a trip on the world's smallest commercial train, the Romney, Hythe and Dummsych Railroad, which travels on 15-inch gauge track. All equipment is one-third scale.

While in Europe Busch also attended the annual MOROP convention of European model railroaders, historical clubs, and manufacturers held in Lucerne, Switzerland, Sept. 4-5.

Magazine Features Dynamics Rail Fans

General Dynamics model railroad fans appear this month in a major article in Model Railroader magazine, which features operation and layout of San Diego Model Railroad Association's activity in Balboa Park's House of Charm.

Mentioned or shown are M. C. Brogan, retired GD/Astro employee, Arden Berquist, Dave Fyffe and Bud Davies of Astro, and Karl Busch of GD/Convair.

Busch is past president of the San Diego club and has filled important posts in National Model Railroad Association. Fyffe, ARA commissioner, is currently spearheading efforts to design and build an HO-scale layout in ARA's recreation area.

Convair Has Entry In Baseball League

Convair's entry in the Industrial Baseball League will meet Schrock Construction in the second game of the season this Sunday (Oct. 20).

The game will be played at University Heights field at 1 p.m.

Convair players traveled to Oceanside for the season's opener last Sunday (Oct. 13).

Seven teams are entered in the Industrial League with games scheduled every Sunday, except Dec. 22, for 14 weeks.

High School Bands Planning Jamboree

Tickets are on sale at GD/Convair and GD/Astro employee services now for the annual autumn Band Jamboree of Grossmont Union High School District to be Nov. 2 in Aztec Stadium.

Bands and specialties corps of six high schools will be featured. Performing will be bands from El Cajon, El Capitan, Granite Hills, Grossmont, Helix, Mt. Miguel High Schools.

Tickets may be purchased until Oct. 28. Adult price is $1; student charge, 50c. All proceeds go toward expenses of the bands.



COMMUNICATIONS MEET — Roger Lewis, General Dynamics president, stresses need for "planning ahead" at first GD wire communications conference, held in New York Corporate headquarters Sept. 24-27.

O'Sullivan Appointed Cost Analysis Head

Richard C. O'Sullivan, who joined General Dynamics Corporate Office in 1962 as a financial analyst, has been named director of cost analysis, W. T. Lake, Corporate comptroller, announced this week.

O'Sullivan, a 1950 graduate of DePaul University, Chicago, with a BS in commerce, and a 1955 University of Detroit graduate with a MBA degree, was assistant to the president of Curtiss-Wright Corp., Woodridge, N. J., before joining Dynamics. He served in the Marine Corps in 1945 and 1946.

"GENDYNAMIC PARIS" CABLE ADDRESS

General Dynamics Corporation office in Paris, France, has established a cable address to expedite messages. The cable designation is Gendynamic Paris. Messages may be sent to the New York switching center for direct routing to Paris.

Planning For Future Important, Says Lewis

General Dynamics' communications system was described by Roger Lewis, president, as the "central nervous system which binds together the Corporation's 85,000 employees" as he opened the first conference of GD communicators in New York City late last month.

He went on to say that the assembled communications representatives are responsible for providing the diverse and geographically scattered facilities of the Corporation with an efficient and economical communications network, and warned that "it is essential for all participants to avoid the dangers of looking only at the immediate requirements and current problems."

"Planning ahead to meet the future communications requirements of the Corporation is the most important part of the communications function," he emphasized.

In general remarks on the Corporation, Lewis said that the company, as a whole, is healthy and vigorous and would continue to play a dominant role in the nation's industrial defense effort.

"At the same time we will work toward increasing the Corporation's share of the commercial market," he pointed out.

Bringing ideas and problems of the wide-spread Corporate communications network into single focus was termed the greatest benefit of the Corporate meeting, called by Robert E. Bennis, GD coordinator of wire communications.

"A closer working alliance on common problems should promote better Corporate communications service and spark a united effort to reduce costs," was the opinion expressed by delegates who represented 10 different divisions, the Canadian subsidiary, and Corporate Office.

Each division's communications requirements, existing service, problems, and proposals were outlined during the Sept. 24-27 gathering, first of a series of other conferences both on Corporate and divisional level.

Panel discussions dealt basically with control of communications costs, covering methods of control affiliated with station equipment, trunk lines, switchboards and operators, dial equipment, long distance calls, personal calls.

Centrex, new telephone service for direct in-and-out dial service, was the subject of a key discussion. Delegates inspected the Centrex installation at the Olin Mathieson Chemical Corp. in New York City and other new projects now in progress at the Bell Telephone Laboratories Research Center in New Jersey.

The 19 conferees heard C. M. Barlow, GD director of administrative services, sum up objectives of GD wire communications thus:

"It is the policy of General Dynamics to develop and maintain the most efficient, dynamic wire communications system at the least cost commensurate with the services performed to meet adequately the need for communications between the Corporate Office, divisions, and field offices; with customers of the company, including branches of the armed services, with sub-contractors and suppliers, and with persons and companies outside the Corporation for effective conduct of business.

"It is the wire communications policy of General Dynamics to permit and encourage its divisions to operate individually within the scope of their authority and to permit its divisions generally to make those decisions which affect their own operations.

"However, it is Corporate policy to advise and guide the divisions in their inter-relationships and in circumstances where a decision or operation of one may affect another or the Corporation as a whole," he concluded.

Divisions represented were GD/Astronautics, GD/Convair, GD/Fort Worth, GD/Pomona, GD/Electronics - Rochester, Stromberg-Carlson, General Atomic, Electric Boat, Electro Dynamic. Material Service, Canadair Limited, Corporate Washington, D.C., field office.

Award of Pin to I. M. Laddon Recalls Early Air Triumphs

A veteran General Dynamics director, and one of aviation's foremost early-day design engineers, was honored last week in the Corporate Offices in New York City.

He is I. M. Laddon of San Diego, whose distinguished career was closely linked with the growth of one of General Dynamics' older "roots" — Consolidated Aircraft of the 1920s and 1930s, which later became Convair and a division of General Dynamics.

Laddon received his 35-year service emblem from Roger Lewis, president.

A graduate of McGill University, Laddon was with Cadillac Motor Co. when he shifted to the Engineering Division of the U.S. Air Service in 1917 and during the next 10 years established himself as a foremost civilian design engineer, chief of the Design Branch 2 (heavy aircraft) at McCook Field. Among his designs were the GAX attack plane of 1919, the all-metal CO-1 of 1921. The Bendix-Laddon disc wheel and integral brake became standard equipment in the late 20s.



MILESTONE — Roger Lewis, right, president of General Dynamics, congratulates I. M. Laddon, longtime member of board of directors, on 35 years with company.

It was during a Golden Age of aviation, during which public attention was centered on aircraft as never before (greatly fanned by Lindbergh's flight of May 21, 1927) that Consolidated Aircraft beckoned to Laddon. He joined the company in 1927 and headed a field staff of engineers at Dayton, O., close to procurement headquarters. When a heavy bomber design plan was dropped, Laddon turned his engineers to a Navy competition for a flying boat of more than 80 ft. wing span. Laddon designed an all-metal hull and the plane was hurried to completion at Buffalo (where the company's plant was located) in December, 1928. It was the XPY-1, first flown Jan. 22, 1928. Laddon (who always insisted on making the first flight in any plane of his design) was on board. This was the forerunner of the famous wartime PBY Catalina, after it had been refined first as the XP2Y-1 and then the XP3Y-1.

In early 1939 when the Air Corps asked for a bomber with more than 300 mph speed, 35,000 ft. operating ceiling and 3,000 mile range, Laddon started design work immediately. The airplane was designed and built and made its first flight Dec. 29, of the same year, a remarkable feat of design and construction. This was the XB-24, the first of thousands that Convair built for wartime service.

Laddon became a vice president and director in 1935, the year the company moved to San Diego, and has been a director ever since. From 1941 to 1948 Laddon was executive vice president of Convair.

'Success of Value Engineering Rests on Executive Support'

Earlier this year, F. J. Traversi, General Dynamics/Astronautics vice president-administration, participated in a discussion, "An Executive View of Value Engineering," before Los Angeles chapter, Society of American Value Engineers (SAVE).

His remarks were printed in the September "SAVE Journal," and extracts amplify management's views toward value engineering at GD/Astro.

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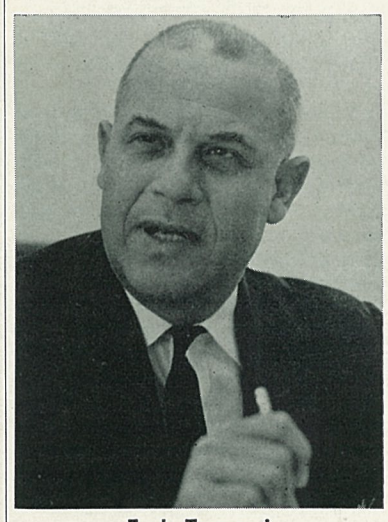
"Value engineering today is a 'must,'" Traversi said. "I believe in it firmly. The rest of our management believes in it . . .

"We must produce quality hardware at the lowest possible cost.

"For years we've been cost conscious, or should have been. Today this is even more essential.

"You've got to take a look at what can be done to save money; to save on the cost of the products, cost of the hardware; government dollars, your dollars, my dollars.

"Anything worth doing at all is worth doing well. This is old hat, but one of the pitfalls we run into in this business . . . is that of going through the motions and giving functions 'lip service'. . . In order for value engineering to function, it must have unqualified top management support or you might as well not have it at all.



F. J. Traversi

"Because if it doesn't have (this) support, and you have a group of technicians or highly qualified people going through the motions while top management takes a 'ho hum' attitude, it may look good, you can publicize it, but it winds up costing more money than it saves . . . and that's pretty difficult to hide."

* * *

"The design engineer traditionally tends to overdesign.

"He says — and perhaps with some professional justification — that it's not good enough just to meet specifications, but 'let's spend a little more money and make it better.' He says, 'It's made of excellent material . . . aluminum has always worked, and it's great, and it meets all the tensile and stress requirements, but let's go to titanium because it's better.'

"Then the value engineer comes along and asks, 'Why gold-plate it?' The designer says, 'Well, because it's more reliable.' And we ask, 'How much more reliable? What's the difference?'

"And many times, when you boil it down, you don't need it!"

* * *

"Value engineering is not a mystic cult. There's no mystery to saving bucks.

"Anything we do in business can be reduced to the common denominator of the dollar. You can measure everything in terms of a buck—plant and equipment layout, equipment productivity, manpower and machine loading, overtime, quantity and quality of supervision, employee morale. You name it, and I'll reduce it to the common denominator of the dollar for you . . .

"Value engineering is here to stay. And as long as everybody involved in such a program does a good job, it's going to stay."

BLOWER PRODUCTS SHIFTED FROM EB

The blower products activity at Electric Boat Division in Groton, Conn., will be transferred to Electro Dynamic Division in Avenel, N. J., Nov. 1.

Principal blower product is vaneaxial fans. The fans are compact units employing patented slotted blades for quiet operation. Developed by Electric Boat for use on nuclear submarines, the fans are now used in military and commercial aircraft and in missile and ground support equipment.

Four of the fans provide the lift for the Hydroskimmer, an air cushion vessel being built for the Navy.

The blower products are closely allied with work at Electro Dynamic, which produces a variety of motors and generators for marine and industrial use.

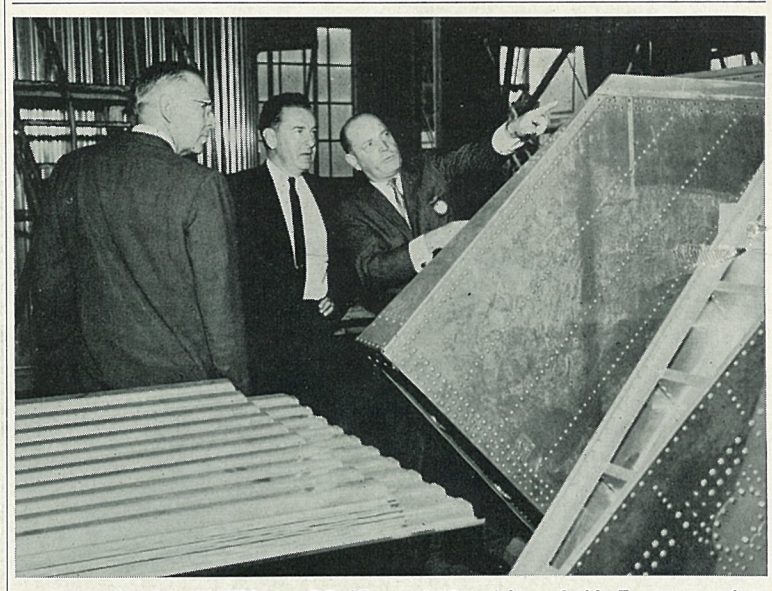
William M. Stratton, blower products manager, and a number of other employees, will be transferred to New Jersey. Employees not moved to Avenel will be reassigned at Electric Boat.

Electro Dynamic, oldest of General Dynamics' operating units, relocated in Avenel last month after its faciilties in Bayonne, N.J., were destroyed by fire.

SCIENTISTS TO HEAR DYNAMICS EXPERTS

Three General Dynamics specialists will present papers during the eighth Symposium on Ballistic Missile and Space Technology at the Naval Training Center, San Diego, this week (Oct. 16-18).

F. E. Jarlett of GD/Astronautics will speak on "Aerospaceplane Payload and Potential"; C. V. David, General Atomic, on "Engineering Aspects of the Orion Concept"; and P. R. Shipps, also General Atomic, on "Preliminary System Characteristics of Orion Space Propulsion."



GOVERNOR VISITS — GD/Convair President J. H. Famme points out features of Little Joe II components to Gov. Jack Campbell of New Mexico during recent visit to San Diego division. At far left is R. H. Biron, Corporate vice president.

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GD/Convair and GD/E Get Set For Con-Trib Membership Drive

Con-Trib-Club drives for both GD/Convair and GD/Electronics-San Diego will be kicked off next month in a concerted effort to include all employees in the "giving where it's needed" program.

Drive dates for both are from Nov. 18 through Nov. 22.

"Our goal is 100 per cent participation!" exclaimed both J. K. Field, GD/Convair drive chairman, and J. W. Swank, GD/Electronics chairman.

Tab cards will be in the hands of all supervisors for both GD/Convair and GD/E by the opening Monday date. These cards will be passed out to employees to give all non-members a chance to join and members an opportunity to increase their contributions according to the "fair share."

At present nearly 87 per cent of GD/Convair employees and well over half of GD/Electronics people are donating through payroll deductions to their Employees' Con-Trib-Clubs. These contributions go to help support 75 San Diego charitable organizations included in the United Community Services and to dozens of other worthy charities not represented in UCS.



In addition, 10 per cent of total Con-Trib receipts goes into Emergency Aid Funds at each division to assist GD/Convair and GD/E people who are faced with financial emergencies through no fault of their own.

This is the second annual Con-Trib drive conducted for GD/Electronics people. Their first separate campaign was held in the fall of last year.

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR and GD/ELECTRONICS)

GENERAL DYNAMICS
NEWS

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NASA Looks Back On 5-Year History

Earlier this month National Aeronautics and Space Administration (NASA) marked the fifth anniversary of its founding: five years' active participation as a leading member of the government-military-industry team which has stretched the nation's vision beyond the skies and into space.

Starting in 1958 with a handful of programs, some 8,400 employees, and four major research centers, NASA has now completed more than 100 major launches, sending into space a variety of satellites and research probes as well as the first U. S. astronauts.

At its fifth anniversary, NASA's employment totals 30,000. Its work continues at 10 major centers.

Space agency administrator is James E. Webb, with Dr. Robert Seamans, associate administrator.

Effective Nov. 1, new organizational alignments will group NASA's major research centers under three newly-appointed associate administrators according to their general missions.

Dr. George Mueller becomes associate administrator for manned space flight; Dr. Raymond Bisplinghoff, associate administrator for advanced research and technology; and Dr. Homer Newell, associate administrator for space sciences and applications.

Working with industry on the array of projects which comprise the total space effort are NASA's research centers, scattered from coast to coast.

AMES RESEARCH CENTER, Moffet Field, Calif., Dr. Smith J. DeFrance, director, researches phenomena in the physical, space and life sciences, with project management of biosatellites for in-space research on living organisms.

FLIGHT RESEARCH CENTER, Edwards, Calif., Paul F. Bikle, director, uses aircraft computers, simulators and laboratories in both ground and in-flight research on manned missions within and without the atmosphere.

GODDARD SPACE FLIGHT CENTER, Greenbelt, Md., Dr. Harry I. Goett, director, has prime NASA responsibility for managing applications satellite projects, unmanned scientific satellite projects, and NASA's worldwide tracking and data acquisition operations.

JET PROPULSION LABORATORY, Pasadena, Calif., W. H. Pickering, director, is operated for NASA by California Institute of Technology to conceive and execute research programs, flight projects, advanced development and experimental investigations.

LANGLEY RESEARCH CENTER, Hampton, Va., Dr. Floyd L. Thompson, director, conducts broad investigations in areas such as vehicle configurations, materials, structures, flight mechanics, space travel and re-entry problems.

LAUNCH OPERATIONS CENTER, Cape Canaveral, Fla., Dr. Kurt DeBus, director, works with the Air Force in using Atlantic Missile Range facilities, and is responsible for launch development and operations in the manned lunar program at NASA's new Merritt Island launch area.

LEWIS RESEARCH CENTER, Cleveland, Ohio, Dr. Abe Silverstein, director, handles research and development in areas of advanced propulsion and space power generation.

MANNED SPACECRAFT CENTER, Houston, Texas, Robert R. Gilruth, director, is headquarters for all NASA manned space flight activities including Projects Mercury, Gemini and Apollo.

MARSHALL SPACE FLIGHT CENTER, Huntsville, Ala., Dr. Wernher Von Braun, director, holds responsibility for developing and providing launch vehicle and space transportation systems, including conception, manufacture and testing.

(Continued on page 4)

★ ★ ★

From Atlas to Little Joe, General Dynamics Participates in Many NASA Achievements

General Dynamics products—notably Astro—have accompanied NASA efforts on numerous "red letter days" throughout the space agency's history. Some of these milestones:

Oct. 1, 1958: NASA formally instituted.

Oct. 7, 1958: Project Mercury organized.

Nov. 29, 1961: Chimpanzee Enos safely recovered after two earth orbits in Atlas-boosted Mercury capsule. GD/Electronics designed display systems for Project Mercury operations room at Cape Canaveral.

Feb. 20, 1962: Atlas boosts Astronaut John H. Glenn Jr. into three-orbit flight in Friendship 7.

April 23, 1962: Atlas launches Ranger IV on trajectory to impact the moon on April 26.

May 8, 1962: First test flight of Atlas-Centaur.

May 24, 1962: Atlas-Mercury launch sends Astronaut M. Scott Carpenter into three-orbit flight.

Aug. 27, 1962: Atlas launches Mariner II on Venus flight.

Oct. 3, 1962: Walter M. Schirra Jr. pilots Sigma 7 on third successful Atlas-Mercury flight.

Dec. 14, 1962: Mariner II flies by planet Venus.

May 16, 1963: Astronaut L. Gordon Cooper makes it "four-for-four" by completing 22 earth orbits during final 34-hour Mercury flight.

Aug. 1, 1963: Mariner II completes first orbit of sun; has travelled 540 million miles.

Aug. 28, 1963: GD/Convair-built Little Joe II makes successful maiden flight.



REWARDED — GD/Convair President J. H. Famme presents Convair trophies to captains of winning F-102 and F-106 teams at close of 1963 William Tell weapons meet, from top: Col. G. C. McCrory, captain of champ F-102 team, 146th FIS, Pittsburgh, Pa.; Lt. Col. H. S. Askelson accepts top F-106 trophy for 318th FIS, McChord AFB, Wash.; below shot of interceptors lined on weapons center flight line are Lt. Col. Joseph Rogers, high individual scorer and captain of second-place F-102 team, 317th FIS, Elmendorf, Alaska; and Lt. Col. L. W. Kupersmith, captain of runner-up F-106 team, 11th FIS, Duluth, Minn.

Donations to Three Charities Approved

Donations totaling $1,250 went to three charitable organizations from GD/Convair Employees' Con-Trib-Club following committee aproval this month.

Sunnyside Residential Care Facilities received $500; John Tracy Clinic, $250 to help support its work with deaf children; and the Arthritis and Rheumatism Foundation's San Diego Chapter, $500.

Competition Hot For William Tell

An F-102 team again took top honors in competition at the USAF World-Wide Fighter Interceptor Meet as it soared off with best overall performance in the 1963 William Tell held Oct. 7-13 at Tyndall AFB, Fla.

The 146th Fighter-Interceptor Squadron of Pittsburgh, Pa., captained by Col. G. C. McCrory, took first place in F-102 competition and posted an 8,427 point score for the William Tell championship.

(Another F-102 team, the 59th FIS, Goose AB, Labrador, topped the last William Tell weapons competition two years ago with a perfect score.)

F-106 competition was won by Seattle Air Defense Sector's 318th FIS from McChord AFB, Wash., led by Lt. Col. H. S. Askelson, with 7,762 points, and the 445th FIS from Wurtsmith AFB, Mich., repeated its 1961 performance by taking first in the F-101 category.

The 146th FIS, an Air National Guard squadron, entered the meet which scrambles interceptors into action under realistic combat conditions, as favorite. It recently won the RICKS Trophy competition, Air National Guard standard of excellence, and flies the Air Defense command "A" award for superior performance.

President J. H. Famme of General Dynamics/Convair was at the Florida weapons center to present Convair trophies to winning F-102 and F-106 teams in ceremonies held Oct. 14.

Runner-up F-102 team was the 317th FIS from Elmendorf, Alaska, with 8,123. Its captain, Lt. Col. Joseph Rogers, was the meet's top individual scorer with 4,650 points.

Second-place F-106 team was the 11th FIS of Duluth Municipal Airport, Minn., captained by Lt. Col. L. W. Kupersmith. Team score was 6,269.

Other F-102 team standings were: 4th FIS, Misawa Air Base, Japan, third; 525th FIS, Bitburg Air Base, Germany, fourth; 460th FIS, Portland International Airport, Ore., fifth; 5th FIS, Goose Air Base, Labrador, sixth.

F-106 teams stood: 48th FIS, Langley AFB, Va., third; 456th FIS, Castle AFB, Calif., fourth.

Teams demonstrated their capability against high altitude and low level targets in both day and night missions and against unknown "intruder" targets.

Targets were radio-controlled jet drones, Ryan Q2C Firebees, made in San Diego.

Miss Torch '63 Named as 3,500 Cast Ballots

Bettejeane (B.J.) Shelton of GD/Convair Dept. 6 won the Miss Torch of 1963 title in a heavy-voting race to decide the fire prevention queen of the year.

Sharing honors was Dept. 141, C-141 empennage assembly, which proved that its people had the most knowledge of fire safety rules in GD/Convair fire department's annual contest.

Fire Chief D. D. Dimmitt expressed amazement at the tremendous response which attended both divisions of the yearly contest, staged during National Fire Prevention Week to draw employees' attention to importance of fire precautions.

Nearly 3,500 ballots were cast in the Miss Torch election and hundreds of calls were received daily at the fire station for information on fire safety regulations.

B.J., as she is best known, garnered just 100 more votes than her nearest challenger, Marilyn Sorcinelli of Dept. 171. Other queen candidates were Crystal

(Continued on Page 2)



COMPARE TROPHIES—Bettejeane Shelton (Miss Torch of 1963) and Paul Pearson, Dept. 141 foreman, admire each other's trophies won in annual fire prevention contest. In rear are Fire Chief D. D. Dimmitt; Stan Sharp, manager of industrial security; M. C. Tombler, engineering service supervisor.



VETERAN — Kurt Klein, Dept. 131, celebrated 35th GD/Convair anniversary this month. He received congratulations and service emblem from President J. H. Famme.

Miss Torch '63 Named as 3,500 Cast Ballots

(Continued from Page 1)

Wright of Dept. 27, Juliet Allen of GD/Electronics Plant 2, and Wanda Rose of GD/E Plant 1.

As fire prevention queen, B.J. received a handsome trophy for herself and figured in presentation of the winning department's award, a large traveling trophy.

Dept. 141 went all out to win its place at the top of the departmental list.

Correct answers to the fire department's questionnaire were distributed to everyone of the 75 employees, said Paul Pearson, foreman. Assistant foremen Jack Benedict, Joe Miller, Ben McMicken held briefings throughout the week to be sure each person knew what to do in case of fire, locations and use of fire extinguishers.

Their score on final examination day was 95.5 per cent.

Graphic reproduction section (Dept. 16-6) of communication department had the highest score of any individual section—99 per cent. However, the overall department score was a not-so-high 89.1.

Pod and pylon (Dept. 140) was runner-up to winning department with 95.1.

Tool manufacturing (Dept. 401), experimental (Dept. 131), and manufacturing control (Dept. 42) each scored 95s. Field operations (Dept. 171) and reliability and quality control (Dept. 48) stood tied at 94.1, and Dept. 119, metalbond fabrication and assembly, had a 94. Thirteen other departments had 90 to 93 per cent.

"We found that manufacturing departments, where fire hazards are the highest, have the best knowledge of basic fire prevention and fire safety rules. Engineering areas and office departments showed a lack of necessary information," said Chief Dimmitt. "We intend to concentrate our safety training in these areas to bring them up to the standards we must have throughout the entire plant to keep our perfect fire prevention record."

Other fire department activities during Fire Prevention Week included distribution of brochures containing fire safety rules to employees at both GD/Convair and GD/Electronics, several demonstrations on the use of fire extinguishers within departments, and participation in a mutual aid drill at the Naval Training Center.

Key to Management Offered in Lecture

GD/Convair Management Club members are invited by the San Diego Chapter of American Society of Training Directors to attend a special program Nov. 4, aimed directly at managers.

"How Managers Make Things Happen," will be explained by Dr. George S. Odiorne, author, professor, and former industrial executive. He will speak in the Pacific Beach Junior High School auditorium at 8 p.m. next Monday.

Cost of the lecture is $1.50 per person. Tickets sold in blocks of five or more will be $1 each. Tickets may be obtained from L. J. Hayes, GD/Convair Plant 1, ext. 1385 or 1386.







VC IN ACTION—Two dozen GD/Convair men (lower photo) who recently completed value control seminar No. 19 line up on final "graduation" day Oct. 22. Center shot shows H. P. Williams, GD/Convair manager of value control, with R. E. Glatfelter, BUWEPS engineering representative, and J. Thetekdjoe, Garuda customer representative, who both took indoctrination. Upper shot is audience at presentation of two task forces assigned to special projects in seminar No. 18.

Far-Reaching Effects Expected As Result of Two Value Seminars

Two separate value control seminars at General Dynamics/Convair ended last week with results which will have far-reaching effects as the division moves into areas of new business, said H. P. Williams, value control manager.

Two special task forces, as seminar No. 18, concluded a six-week investigation which took them into most division functions as they value analyzed ways of streamlining and updating procedures to prepare the way for forthcoming contracts.

Four other six-men teams completed the regular value control programmed instruction in seminar No. 19.

Reports from both groups on Oct. 22 showed again that overall costs can be drastically reduced and quality improved by close looks at value vs. costs at initiation of any project.

For the first time representatives of a GD/Convair customer and military agency took part in one of the division's regular value control sessions, J. Thetekdjoe, Garuda Indonesian Airways' representative, based at the San Diego division, and R. E. Glatfelter of the Navy Bureau of Weapons Representative's office, both took active part on seminar teams.

Thetekdjoe was so impressed with possibilities of value control applications that he has asked for special indoctrination for Garuda personnel now at GD/Convair for flight and maintenance training on Convair 990As. He hopes to introduce value control techniques within his own organization and set up similar training programs when he returns to Indonesia.

Seminar teams examined new business proposals for value assurance in early research and development stages; new methods of tooling and fabrication to turn out quality parts at lower costs for advanced vehicles; and more reliable methods of F-106 external tank attachment at request of the Air Force.

The two task force teams, made up of 12 persons on the supervisory level, were assigned two long-range projects to reduce costs and improve technical materials coincident with new contracts.

Team No. 1 analyzed present practices followed in preparation of operating, maintenance, checkout, and training materials. Its goal was reduction of duplicate effort and elimination of unnecessary data.

Team No. 2 examined current blueprint reproduction and distribution methods to determine possible ways to improve service and reduce costs.

Findings of both teams were laid before supervision of all concerned departments. These department heads, in turn, will determine how and when implementation should take place.

Task force team No. 1 included: H. R. Kennedy, chief of technical publications; W. F. Brown, documentation control specialist; Ed Caldwell, inspection supervisor; R. E. Fetterly, contract estimating specialist; J. E. Foster, logistics contract representative; E. A. Rumney, buyer.

Task force team No. 2—H. B. Day, graphic reproduction supervisor; Millard Jahn, computer system analyst; Robert Gadow, production change analyst; Gertrude Hunter, publications editor; Charles Foster, logistics provisioning representative; H. F. Von Goodat, design planning group engineer.

G. P. Williams, technical publications assistant supervisor, was project leader for both teams.

* * *

Seminar No. 19 team members, departments, project leaders were:

No. 1—J. T. Rudis (6), L. R. Appel (6), M. J. Fritz (27), J. A. Contasti (171), A. C. Oehler (131), R. E. Glatfelter (BUWEPS). Project leader, Don Pratt (6).

No. 2—R. G. McGeary (6), J. Vella (27), F. Heflin (15), I. L. Quillin (141), D. Fletcher (6), J. Thetekdjoe (Garuda). Project leader, Pratt.

No. 3—I. R. Owens (6), R. E. Shipman (27), W. I. Gregory (131), W. E. Smith (15), T. E. Johnson (23), A. H. Stephens (6). Project leader, Max Walden (400).

No. 4—D. O. Whitney (6), A. Sjostrom (25), O. A. Wahlsten (400), R. C. Bailey (16), C. F. Martens (23), J. J. Swarts (48). Project leader, Walden.

FEDDERSEN HEADS MFG. ENGINEERING DEPT. FOR CONVAIR

A new department has been formed at General Dynamics/Convair to consolidate all existing functions which have the common mission of providing the "how" of manufacturing.

Manufacturing engineering, as the new department is designated, now includes tooling, methods, manufacturing research and development, plant engineering, and facilities control, according to an announcement by W. R. Bruce, director of operations.



E. W. Feddersen

E. W. Feddersen, former Corporate director of manufacturing engineering, has transferred to GD/Convair division to head the new organization as manager.

Manufacturing engineering consists of three major sub-departments: tooling and manufacturing planning under E. H. Damarus, chief tool engineer; manufacturing research and development, M. D. Weisinger, chief; plant engineering, Vern Sharp, chief.

R. D. Marks is manufacturing planning general supervisor.

Tooling and manufacturing planning section includes all of the present tooling department activities, manufacturing methods, and cost and performance reporting responsibilities formerly assigned to the manufacturing methods department.

Realignment of manufacturing research and development to place it directly under the manager of manufacturing engineering will strengthen its position and effectiveness as a manufacturing support capability, explained Bruce.

Plant engineering includes the present plant engineering and maintenance activities, Resources Economics, and facilities control functions formerly in manufacturing methods.

Consolidation of these manufacturing support functions will enhance GD/Convair's competitive abilities through the integrated competence of a single organizational unit, said Bruce.

"Most important, it will allow a single control and monitoring of related functions to bridge the gap between product design and product manufacture, improving efficiency and reducing operating costs," he said.

Feddersen had been with Corporate Office since May, 1961, first as director of manufacturing development and the last two years as director of manufacturing engineering.

He joined the company at GD/Convair in 1940, transferring to the Fort Worth division in 1942. Except for a year, in 1946, he has been with the Corporation ever since. He served as chief of manufacturing research and development while at GD/Fort Worth and was B-70 project administrator at the time of his transfer to Corporate Office.

GD/E's MGT. CLUB HEARS CANDIDATES

GD/Electronics-San Diego Management Club members heard San Diego mayoralty candidates present their platforms at the group's Oct. 23 meeting at Catamaran Hotel.

Candidates Frank Curran and M. D. Goodrich each presented their views on civic issues, then answered questions from the audience with GD/E's Lou Diamond acting as moderator.

This meeting takes the place of a gathering during the month of November, explained T. E. Morris, second vice president and program chairman. It was set up to the October date to give Management Club members a chance to hear the two candidates before next week's final election.

No event will be scheduled during December.

Log Book Entries

Retirements

CONVAIR

HADDAD—George E., Dept. 218. Seniority date Aug. 17, 1950, retirement effective Oct. 11.

HEVERLIN — Myrtle M., Dept. 218. Seniority date March 23, 1951, retirement effective Aug. 10.

HOLMES—Paul D., Dept. 93. Seniority date March 28, 1951, retirement effective Oct. 7.

LAMBERT—Arthur R., Dept. 6. Seniority date April 13, 1939, retirement effective Oct. 7.

MORTON—James H., Dept. 160. Seniority date Nov. 15, 1951, retirement effective Aug. 3.

SANDSTEN—Viola N., Dept. 149. Seniority date Oct. 17, 1950, retirement effective Aug. 13.

SERGENT—Eugene L., Dept. 48. Seniority date July 3, 1950, retirement effective Aug. 30.

VAN NEST — Albert K., Dept. 117. Seniority date Oct. 10, 1951, retirement effective Aug. 7.

Service Emblems

CONVAIR

Service emblems due during the period Oct. 16 through Oct. 31.

Twenty-year: Dept. 6-7, C. C. Gordon; Dept. 97-1, H. B. Rogers; Dept. 101, E. W. Fenwick; Dept. 171, O. L. Newman.

Fifteen-year: Dept. 1-60-1, Leta M. James; Dept. 6-3, W. M. LaFleur; Dept. 14, R A. Gilstrap, T. O. Mott; Dept. 16-6, Priscilla W. Creech; Dept. 25-1, E. L. Anderson; Dept. 400-1, T. O. Patterson; Dept. 401-4, R. F. Lorch.

Ten-year: Dept. 6, W. H. Hibbert, R. N. Myers, J. M. Wood; Dept. 15-0, M. R. Woodard; Dept. 25-2, J. W. Bradley, Pete House, Jessie H. Jordan; Dept. 26-2, Z. I. Fields; Dept. 27-5, A. B. Hunter, R. F. Perkis; Dept. 34-5, Mary C. Fink; Dept. 48-32, P. C. Godfrey; Dept. 128, C. H. Fenstermacher; Dept. 131, L. R. Humphrey.

GD/ELECTRONICS

Ten-year: Dept. 33-00, Floye M. Mann; Dept. 34-00, Ricardo Mungcal; Dept. 72-00, Inez K. Spears.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Oct. 11 and Oct. 18.

Dept. 25, W. T. Toon, $27.40.
Dept. 42, E. V. Kline, $56.20.
Dept. 48, R. J. Harris, $20.
Dept. 93, C. M. Malcangio, $48.
Dept. 115, G. C. Archbold, $13.50.
Dept. 119, C. H. Stringfield, $10.
Dept. 128, M. H. Hill, $121.80, partial payment; R. V. Lucero and N. P. Newman, joint award, $10 each.
Dept. 141, M. M. Doerr, $24.

Personals

CONVAIR

We would like to express our deepest appreciation to GD/Convair friends for the cards of sympathy and beautiful floral arrangements sent in memory of our husband and father, Carl L. Pieper (retired).

Mrs. Eunice Pieper and daughter, Pamela

Deaths

CONVAIR

KNAPP — Lucille, Dept. 115. Died Oct. 8. Survived by husband, two brothers, two sisters.

General Dynamics NEWS

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Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320. P.O. Box 1950, San Diego 12, Calif. Telephone 296-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

GD/Electronics (San Diego) news contact: Helen Wood, 298-4641, ext. 1377, Plant 1, Bldg. 51.

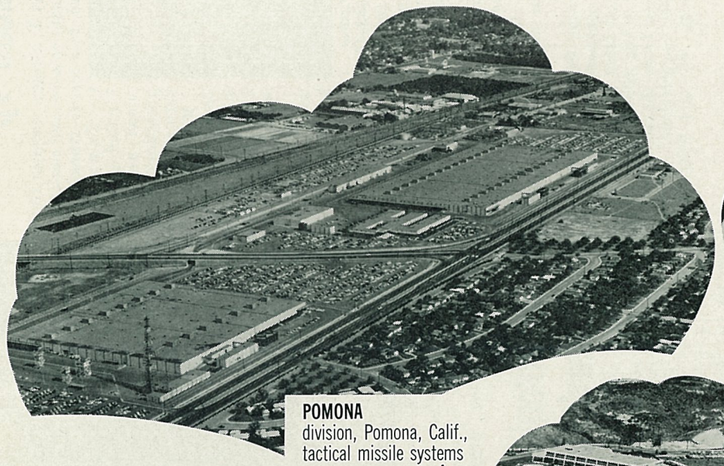
Fort Worth Editorial Offices, between Cols. 71-C and 71-D, Assbly. Bldg., GD/Fort Worth, Mail Zone T-63, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

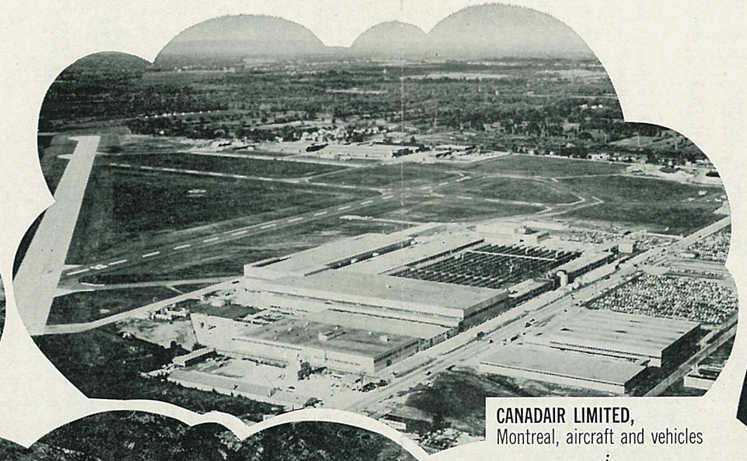
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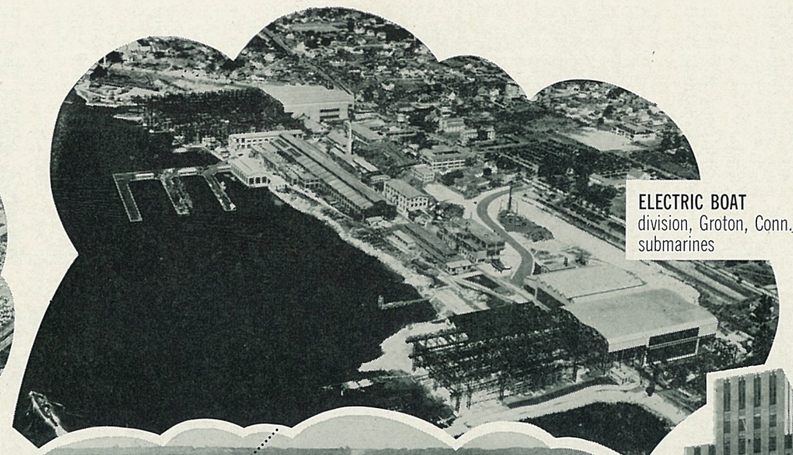
The Wide, Wide World of General Dynamics Corporation



POMONA
division, Pomona, Calif.,
tactical missile systems



CANADAIR LIMITED,
Montreal, aircraft and vehicles



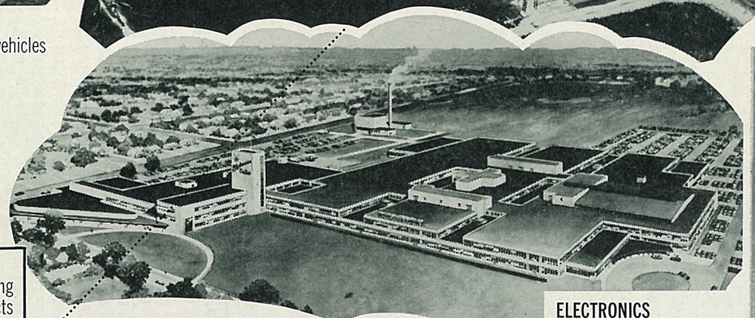
ELECTRIC BOAT
division, Groton, Conn.,
submarines



GENERAL ATOMIC
division, San Diego, Calif.,
nuclear reactors, technology

MATERIAL SERVICE
division, Chicago, Ill., building
materials, coal, lime products

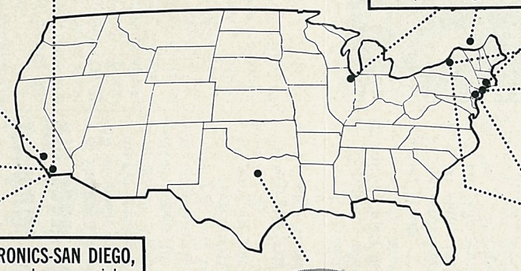
LIQUID CARBONIC
division, Chicago, Ill.,
compressed gases

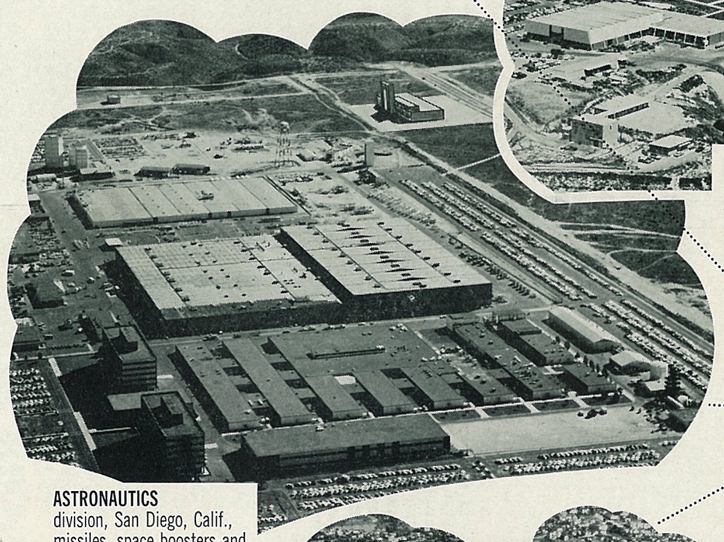


ELECTRONICS
division, Rochester, N.Y.,
military and commercial
electronic equipment



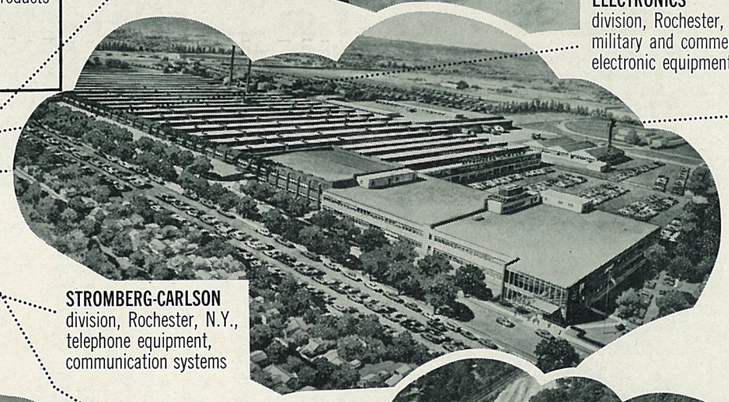
CORPORATE HEADQUARTERS,
New York City



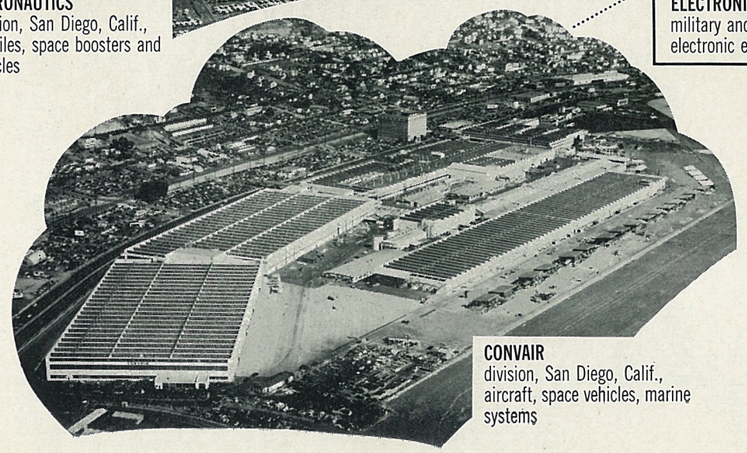


ASTRONAUTICS
division, San Diego, Calif.,
missiles, space boosters and
vehicles

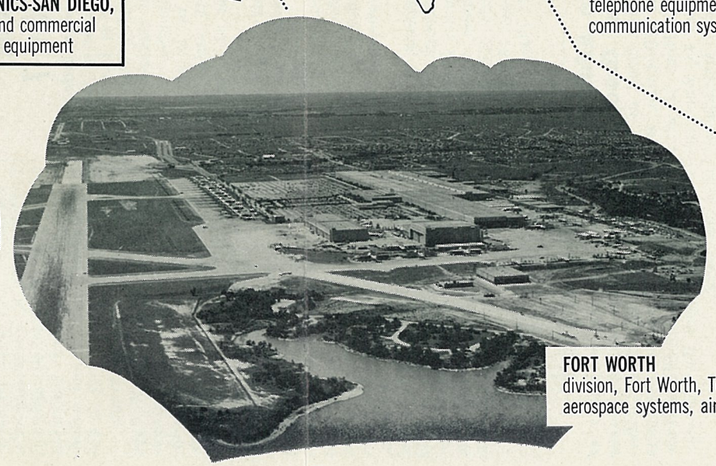
ELECTRONICS-SAN DIEGO,
military and commercial
electronic equipment



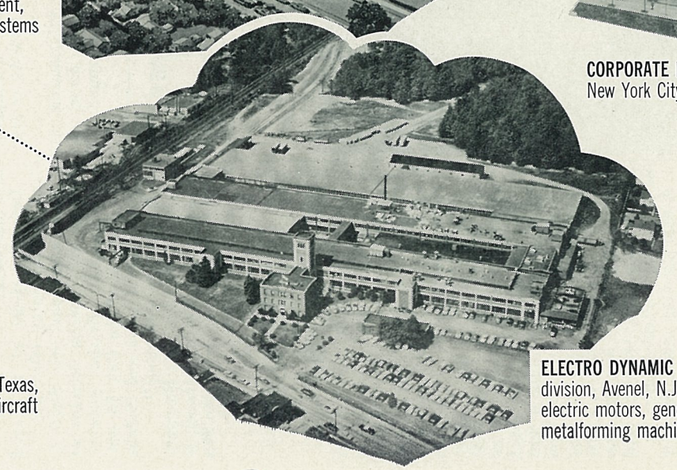
STROMBERG-CARLSON
division, Rochester, N.Y.,
telephone equipment,
communication systems



CONVAIR
division, San Diego, Calif.,
aircraft, space vehicles, marine
systems



FORT WORTH
division, Fort Worth, Texas,
aerospace systems, aircraft



ELECTRO DYNAMIC
division, Avenel, N.J.,
electric motors, generators,
metalforming machines

Conley Named Canadair Vp

Robert F. Conley, veteran General Dynamics sales and contracts executive, this month transferred to Canadair Limited at Montreal as vice president-marketing.



R. F. Conley

He had been General Dynamics director of commercial sales.

Conley, a native of Nebraska, joined Convair in 1941, spent 1943-46 in the Navy, overseas in the Pacific, attended University of Nebraska and returned to Convair in 1947, continuing his education at San Diego State College. He was graduated with a BA degree in 1950 and left the Company to attend the University of California at Berkeley where he earned his law degree in 1953.

Returning to the Company, he was in contracts for Convair division and later the Corporation, playing a key role in jet transport sales from the time of the early 880 negotiations, through the 880-M, 990 and 990A programs.

Quality Control Experts Confer

General Dynamics supplier quality control working committee was hosted last month by GD/Astronautics and L. I. Medlock, quality control manager, at a meeting in San Diego.

The committee is charged with developing a uniform philosophy of supplier relations and standard systems of quality control and quality assurance procurement practices among various General Dynamics divisions.

Those participating during sessions included R. E. Martin, GD/E-San Diego; S. K. Chambers, D. W. Schact and F. MacCafferty of GD/Pomona; D. W. James of GD/Fort Worth; G. R. Bailey and M. E. Walker of GD/Convair; and K. M. Boekamp and T. J. Marcella, GD/Astro.

Sam Braun of GD/Astro served as committee chairman during 1963, and will be succeeded by Charles Wallman of GD/Convair for the coming year.

Single Month Left In Big Game Drawing

Hunters have just one more month to enter their "kills" in CRA-ARA Gun Club's annual Big Game drawing.

Deadline date for registration is Dec. 1. Entry blanks are available at all employee services outlets.

All General Dynamics people and members of their families are eligible to enter the contest which draws well over 100 entries each year, said CRA Commissioner Jack Swank and ARA Commissioner Ezra Johnson.

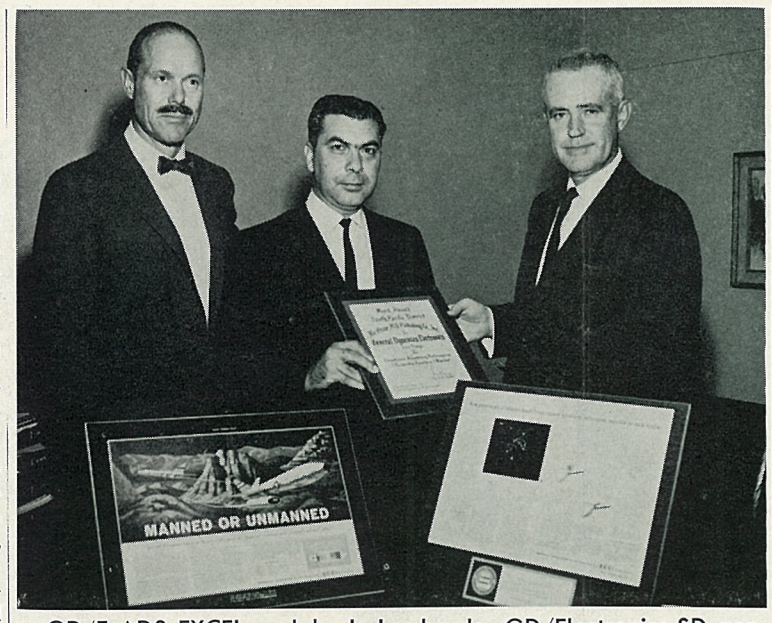
Anyone who bags big game, such as deer, elk, moose, bear, javelina, may get his name in the hat for the valuable prizes at the drawing to be held at the Gun Club's Dec. 10 meeting.

Winner will get an outboard motor. Second prize is a tape recorder; and third, a .22-calibre revolver.

A variety of sports articles will be given as secondary prizes, with the number depending entirely on the number of entries, said Swank. And, those sharpshooters who have downed two big game bags may register twice.

PLANT VOLLEYBALL LEAGUE PROPOSED

ARA is considering formation of a plant volleyball league to begin play later this year. Employees or dependents interested have been asked to contact Tom Zielinski, main plant ext. 1392, by Nov. 8.



GD/E ADS EXCEL — John L. Lombardo, GD/Electronics-SD general manager (center), receives special award for GD/E advertisements from Knox Bourne, McGraw-Hill vice president. At left is Phillips-Ramsey, Inc., president, Charles Ramsey.

GD/Electronics Display Ads Picked For Awards by Publishing Company

Superior advertising of company products has won a unique award for General Dynamics/Electronics-San Diego.

McGraw-Hill Publishing Co. selected GD/Electronics for special recognition by virtue of unusually high readership interest generated by two specific advertisements carried in McGraw-Hill publications.

In May of this year "Control Engineering" magazine carried a GD/E advertisement designed to sell the division's products which display computer information. In a survey of that issue, it was found that a whopping 46 per cent of the readership polled had read the ad thoroughly, making it the most noticed and best read ad in the magazine.

The same advertisement was run again in the July issue of the same magazine and this time 31 per cent of the readers noted it, again the best score out of more than 100 competing advertisements in the issue.

Another advertisement dealing with GD/E's new radar product, Terrain Following Radar, carried in the May issue of "Electronics" magazine rated correspondingly high readership scores.

A special publishing award for excellence in advertising, together with separate awards from each magazine, were presented GD/E General Manager John L. Lombardo last week by Knox Bourne, vice president of McGraw-Hill.

At the ceremony was Charles Ramsey, president of GD/E's advertising agency, Phillips-Ramsey, Inc.; Payne Johnson, GD/E manager of communication; and Walt Colvin, GD/E manager of plans and programs.



CONGRATULATIONS—G. W. McGinley, GD/Electronics-SD manager industrial/commercial requirements, congratulates H. E. Pietsch of GD/Astronautics on re-election as UAIDE president. Other officers are Marvin Hoffman of North American Atomics International Division, vice president (at left), and K. Leon Montgomery of GD/Astro, secretary (far right).

UAIDE Re-elects Dynamics Man To Head S-C 4020 Users' Group

H. E. Pietsch, GD/Astronautics research group engineer, was re-elected president of the UAIDE organization (Users of Automatic Information Display Equipment) at the Oct. 15-17 annual meeting, Miami Beach, Fla.

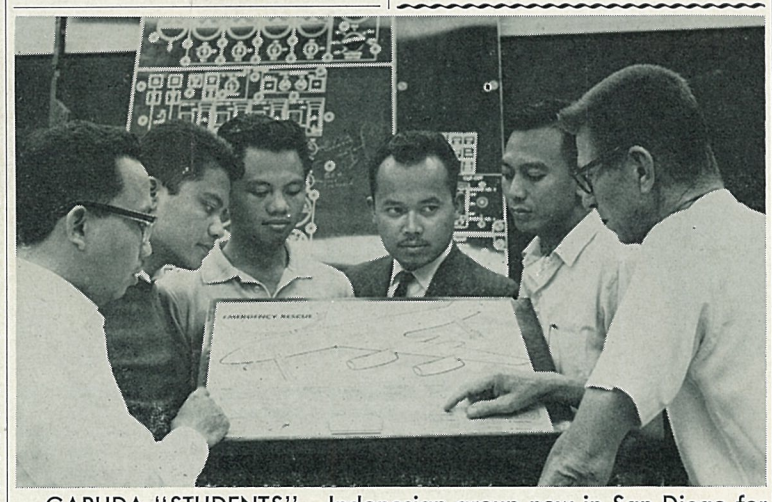
Second terms also went to K. Leon Montgomery, GD/Astro senior research engineer, secretary, and Marvin Hoffman of North American Aviation's Atomic International Division, vice president and program chairman.

Seventy-five representatives from 43 different companies, government agencies, military installations, and educational institutions—all users of GD/Electronics-San Diego's S-C 4020 Microfilm Recorder—attended.

General Dynamics men presenting papers included Tom McGuire of GD/Astro whose topic was "APHLO—A Flow Charting Program," and James Carr, also GD/Astro, "Automatic Visual Display Technical Manuals."

GD/Electronics-SD personnel who participated in panel discussions were Fred Walz, Ed Wright, Jake Konen, and E. A. Bates.

Objectives of UAIDE are to promote interchange of information concerning S-C 4020 applications and to reduce duplication of effort in preparation of computer programs among users.



GARUDA "STUDENTS"—Indonesian group now in San Diego for GD/Convair maintenance training on 990A includes (from left) Arifin, Madijono of Dept. of Civil Aviation, Suparto, Sartono, DCA, Ibrahim with customer service instructor W. F. Ashmore at far right.

Cash Offered For Articles

A new Writer's Award Program has been established at GD/Convair to encourage the division's personnel to write articles for publication in technical and trade journals, announces President J. H. Famme.

As an incentive, GD/Convair will award $150 to an employee for each manuscript accepted for publication in an approved journal. Authors may not accept payment from the publication.

Articles must be at least 1,500 words in length and written on the employee's own time. Papers and speeches prepared originally for presentation at technical meetings are eligible if they meet other requirements and are accepted for publication.

(A similar program is in effect for GD/Electronics employees.)

To submit articles, five copies of Form 3492 Request for Release of Public Information, available from company stationery stores, must be prepared and submitted with typed manuscript, drawings and photos, to supervisors or department heads. When clearance has been received, public relations will assist in submission for publication.

To receive awards, authors must be employed by GD/Convair at the time of official notification of acceptance.

Standards Expert Will Speak Nov. 7

A Boeing Co. standards expert will be main speaker at the Nov. 7 dinner meeting of Instruments Society of America, San Diego Section, open to interested General Dynamics people.

Meeting will be in the U. S. Grant Hotel with social hour at 6:30 p.m., dinner at 7, and program at 8.

"Integration of People, Equipment, and Management into a Measurement Program" is the topic to be discussed by Charles E. Johnson, chief of primary standards metrology laboratories for Boeing's Aerospace Division, Seattle, Wash.

Dinner reservations, $3.50 each, may be made through Dick Barnett, GD/Electronics Plant 2, ext. 23; W. A. Dershem, GD/Convair Plant 1, ext. 2121; Charles Hill. Astro Plant 71, ext. 1322; or Leon Schenke, Astro Plant 71, ext. 2463.

Rovenger to Address Tool Engineer Group

Ronald Rovenger, head of the NASA office at GD/Astro, will be guest speaker Nov. 12 at a meeting of Chapter 44, American Society of Tool and Manufacturing Engineers (ASTME) at Stardust Hotel.

Tickets and information are available from C. E. Roye, ext. 2507, and Dave Haslanger, ext. 3064, at GD/Astro.

November Salvage Schedule Listed

Schedule at GD/Convair and GD/Astro salvage yards for the next four Saturdays is:

GD/Astro—Nov. 2, 16.

GD/Convair—Nov. 9, 23.

Gardeners Set For Fall Show

The best of late-summer blooms — chrysanthemums and roses — will be displayed by GD/E, GD/Convair and GD/Astro gardeners at the joint ARA-CRA Fall Show Sunday (Nov. 3) in Balboa Park's Floral Association Building.

Entries will be accepted between 7 and 11 a.m. the day of the show. No pre-registration is required, no entry fee is charged, and any General Dynamics employee or dependent is eligible to enter.

Henry Boyd, acting CRA commissioner, and ARA Commissioner Everett Henderson have announced judging in eight divisions.

Divisions 1 through 5 are for chrysanthemums in 27 classes.

Division 6 is for corsages in three classes; Division 7 is for children's entries in a 5 to 11-year old class, and a separate 12 to 16-year category; and Division 8 is for roses (eight classes).

Turkeys will go to best of show winners and merchandise prizes to winners in each class.

The show will be open to the public without charge from 1 to 6 p.m.

NASA Observes Fifth Birthday

(Continued from Page 1)

PACIFIC LAUNCH OPERATIONS OFFICE, Point Arguello, Calif., S. J. Burttschell, director, is responsible for launching NASA polar orbiting and sounding rocket research flights on the Navy's Pacific Missile Range.

WALLOPS STATION, Wallops Island, Va., R. L. Krieger, director, launches and tracks nonorbital experiments with rocket-propelled vehicles carrying aeronautics and space research payloads.

Other NASA facilities include Goddard Institute of Space Studies, New York City, Dr. Robert Jastrow, director; Northeastern Office, Boston, Mass., Franklyn W. Phillips, director; Nuclear Rocket Development Station, Mercury, Nev., Bob P. Helgeson, chief; Space Nuclear Propulsion Office, Washington, D.C., Harold N. Finger, manager; Western Operations Office, Santa Monica, Calif., Robert W. Kamm, director.

Conference Devoted To Govt. Contracts

J. R. Dempsey, president of GD/Astronautics, was a speaker at the Western Briefing Conference on Government Contracts sponsored by the San Diego Chapter of the Federal Bar Association last week.

Dempsey spoke at a special luncheon Thursday (Oct. 24).

Also taking part was Hugh T. Verano, GD/Pomona director of contracts and division counsel, who moderated the Oct. 25 session on "Gray Areas and Pitfalls of Incentive Contracting."

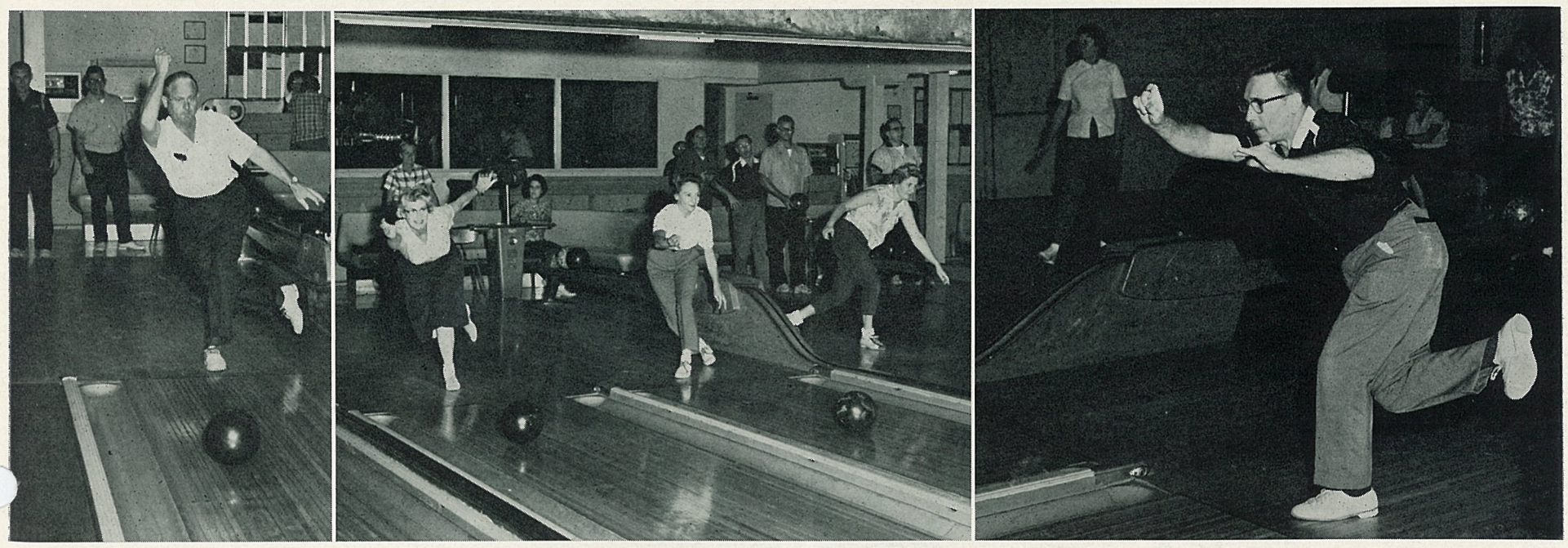
John A. Moore, GD/Electronics-San Diego division counsel, is newly-elected president of the San Diego Chapter, FBA.

Gun Club Members Busy in November

November will be a full month for CRA-ARA Gun Club members with four competitive shoots scheduled in addition to a special program at the regular meeting.

Next Sunday (Nov. 3) will be the regular club shoot; a trapshoot is set for Nov. 17 with Pendleton woolen products as prizes; the annual trap and skeet turkey shoot will be held before Thanksgiving; and a Troy-type trapshoot will be Friday evening, Nov. 29, at 7 p.m. The pot now holds $100 for the shooter who scores 50 straight. All events will be at Gillespie Field Range.

A film showing actual shots of big game hunting in North America, photographed by a well-known local sportsman, will highlight the Nov. 12 meeting at 7:30 p.m. in Gillespie Field Clubhouse.



DOWN THE ALLEYS—Near 300 keglers are warming up in CRA play as winter season nears third month. From left, Jim Hayman, commissioner, aims for a strike in 510 Trio league at Pacific Rec. Co-commissioner Mike Brooks waits his turn at far left. Center shot shows Evelyn Carson, Kitty Aslin, Beverly Smith in action in Women's Doubles. At right, Charles Swearingen tries his luck in recent Friday night competition.

300 Sign For Winter Loop

Nearly 300 GD/Convair and GD/Electronics keglers are bowling in seven leagues as CRA winter keg season swings into its third month. Plant play opened in September at five San Diego alleys and will extend into April.

GD/Convair has six leagues and GD/Electronics, one.

The GD/E league with 8 five-man teams bowls Wednesdays at Aztec Bowl.

GD/Convair leagues are: Hustlers, 12 teams, bowling Tuesdays at University Lanes; Mixmasters, 8 teams, Wednesdays at Pacific Recreation; Engineering Foursome, 12 teams, Thursdays, Victory Lanes; Scouts, 10 teams, Thursdays, Frontier Lanes; 510 Trio, 10 teams, and 4 teams of Women's Doubles bowling Fridays at Pacific Rec.

Spectators are welcome to attend to cheer on favorites, said co-commissioners Jim Hayman and Mike Brooks. All leagues start bowling at 6:30 p.m.

Bridge Fans Meet For Wednesday Play

Bridge players at GD/Convair and GD/Electronics, or those who would like to learn the game, are reminded that regular play is held each Wednesday evening, 7:30 p.m., in the Convair executive dining room, Pacific Hwy.

Frank Westphal, CRA Bridge Club president, extends an open invitation to all General Dynamics people and their guests to join in the weekly sessions. Instruction is offered to beginners.

Only charge is 25 cents for each player, except on Master Points nights held on fourth Wednesdays, when fees are upped to 50 cents. Master Points play is limited to General Dynamics people only.

Bowl Football Game Tickets Go on Sale

Tickets to the 1963 Leatherneck Bowl football game, pitting San Diego Marines against Pensacola Navy, are on sale at GD/Convair employee services.

The annual charity game will be played in Balboa Stadium on Sunday (Nov. 17), 1:30 p.m.

The tickets now on sale are general admission seats on both decks outside the 20-yard line. Price is $1.50 each. They will be on hand at employee services, Bldg. 32, Plant 1, until Nov. 8.

All proceeds from the game will be divided equally between the United Community Services Fund and Navy Relief Society.

Lens Fans to Indulge In Photo Critique

GD/E, GD/Convair and GD/Astro photo fans will "bar no holds" in criticizing each other's work, when the joint ARA-CRA camera group meets Nov. 3, 7:30 p.m., in Balboa Park's Photo Arts Bldg.

Sports & Recreation

Ski Queen Candidates to Model Fashions During Nov. 16 Sno Ball

Sara Jane Bolar of GD/E, as queen candidate of the CRA Snow Ski Club, will, with other club runners-up, model ski fashions at the coming Sno Ball Nov. 16 at Del Webb's OceanHouse.

Mary Jane Gerber of General Atomic Division will rule over the annual Sno Ball. She was chosen from girls representing San Diego area groups. Mary Jane is a member of the Torrey Pines club.

Tickets to the dance are now available at $1.25 each at GD/Convair employee services and may be purchased by the general public, said CRA Commissioner Joe Harris, chairman of the sponsoring San Diego Council of the Far West Ski Association.

CRA club members may get their tickets at the group's next meeting Tuesday (Nov. 5) at 8 p.m. in the Convair executive dining room.

All seven ski clubs of San Diego county are assuming specific responsibilities in arrangements. The CRA group is in charge of dance programs and the Astro club directing the queen contest.

Dance chairman is Roger Graff of Don Diego Ski Club. Other clubs taking part are Torrey Pines, San Diego, Trolls, and Aztec Ski Clubs.

All GD/Convair and GD/E people who wish to learn to ski are urged to attend the Nov. 5 meeting when Harris will explain the dry-land skiing instruction program. Free lessons are given beginners. Intermediate and advanced skiers may take the lessons at reduced rates.



SKI MODEL—Sara Jane Bolar of GD/E, CRA Ski Club candidate for Sno Ball queen, will model at Nov. 16 affair in OceanHouse.

Williamson Sweeps Pistol Competition

Commissioner Joe Williamson swept both events in CRA Pistol Club competition Oct. 13, topping both the .22-cal. Police Course and Short National contests.

Williamson shot a 294 in the Police Course, three points ahead of Jim Halfacre (Dept. 140) whose 291 was good for runner-up spot. Vern Mardis was third with 287.

A 289 placed Williamson at the head of the list in the Short National. Halfacre and Mardis kept their second and third places with 276 and 271, respectively.

Industry Baseball Loop Sets Schedule

Convair's entry in the Industrial Baseball League is scheduled to play Pacific Surplus this coming Sunday (Nov. 3) in its fourth game of the season.

The company nine went down before Oceanside's team in the Oct. 13 opener. Other games were with Shrock Construction on Oct. 20 and National City, Oct. 27.

It draws a bye on Nov. 10, meets Hazard Block on Nov. 17.

Horse Camp Visited By Convair Riders

Horsemen of the CRA Riding Club journeyed to Los Caballos Horse Camp Oct. 12 at the invitation of the Forest Ranger Employees of Cuyamaca Rancho State Park for their last outing before the camp is closed for the winter months.

CRA riders ended the Saturday trail ride with a no-host steak fry. Special guest of the club was Miss Gene Miller, lieutenant commander in the Navy Nurses Corps, riding her quarter gelding, Pepper.

After leaving the State Park, members gathered at the Spring Valley home of Betty and Luke Barbour for a short business meeting and refreshments. Plans were discussed for the club's annual Christmas party set this year for Saturday evening, Dec. 14, at Gillespie Field Clubhouse.

Women Road Runners Triumph Over Men in Debate on 'Cotton'

Women Road Runners talked down the men when they were matched in debate at the CRA trailer club's Oct. 11-13 weekend outing at Lower Otay County Park.

Sixty-three members and guests decided for the ladies as they argued the negative side of the question "Should cotton candy be called cotton candy when there is no cotton in cotton candy?"

Slides taken at the recent Del Mar Rally were shown as members gathered around the Saturday night campfire. On Sunday morning an impromptu mask contest was staged for children. It was won by Susan Boyar, granddaughter of Carl Monds of GD/Convair.

November's trip will be set back a week to the third weekend, Nov. 15-17, when the group will travel to Live Oaks County Park near Fallbrook. Commissioner Ralph East will be wagonmaster and Monds, assistant. Everyone is asked to bring wood for the Saturday night campfire.

Regular monthly meeting will be Nov. 21 at Gillespie Field Clubhouse with the judicial board session at 7 p.m. and members' business and social meeting at 7:30.

'Jim Dandies' Leading Mgt. Club Bowling

A hot "Jim Dandies" team stood half a game in front of the pack in GD/Convair Management Club league bowling as a result of Oct. 21 pin-toppling.

R. G. Beaseley (Dept. 102) was hero of the evening with his 619 series.

Swaggers were in second spot in the ten-team contest which began Sept. 9 and will continue through May.

MPs (material procurement) held onto third place with Featherchants, fourth, and GD/E No. 1 in the cellar.

'Slow Break' Teams Need Few Players

There are still openings for teams in the plant "slow break" basketball league being organized for GD/Convair and GD/Electronics players, said Pete Beyrer of CRA office.

Team rosters must be turned in to Beyrer before Nov. 15. A managers' meeting is tentatively set for that date to formulate rules and schedule for league play.

Games will be scheduled on Balboa Park's Muni Gym courts.

GD/E Employees Give to Fund

GD/Electronics-San Diego employees made a substantial contribution to the United Community Services last week through action of their own Con-Trib-Club.

General Manager John L. Lombardo presented a check for $10,000 to Bud James, San Diego County clerk and chairman of the USC campaign's special groups section, from GD/E's Con-Trib collections during the 1962-63 term.

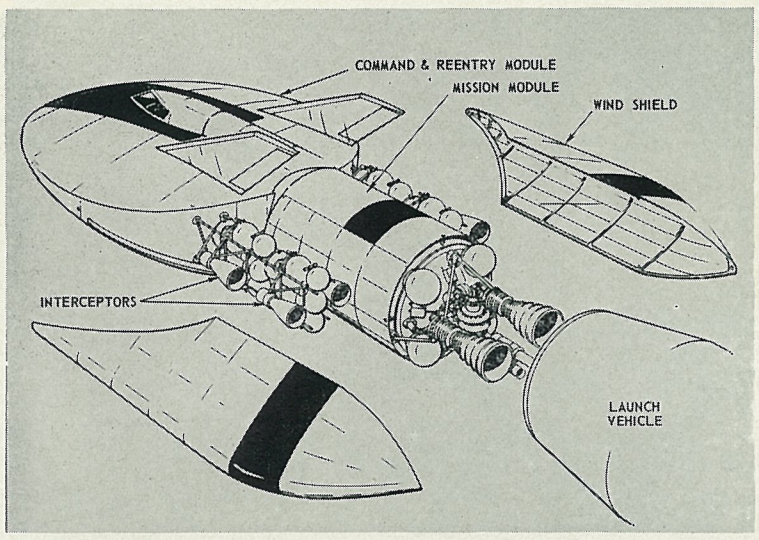
GD/Electronics conducted its own Con-Trib drive in the fall of last year, although until recently all monies were handled jointly with the GD/Convair Employees' Con-Trib-Club organization.

However, a separate Con-Trib Committee has been formed for administering GD/Electronics Plant 1 and 2 contributions. Committee members represent IAM, EAA, GD/E Management Club, and supervision.

J. W. Swank, manager of industrial relations, is chairman. Other members are James Wheeler, Dept. 72, representing IAM; E. M. Larsen of Dept. 34, EAA; D. C. Newlon, Dept. 72, supervision; William Lynt, Dept. 43, representing Plant 2 employees; C. E. Murdock, Dept. 66, GD/E Management Club.



GD/E DONATION—General Manager John L. Lombardo of GD/Electronics - SD hands Bud James, chairman of United Community Services special groups section, $10,000 check on behalf of GD/E Employees' Con-Trib-Club. Approving are Con-Trib Committee members James Wheeler, D. C. Newlon, E. M. Larsen, William Lynt.

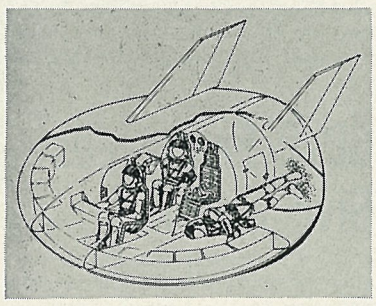


CONCEPT—Proposed manned anti-satellite system would inspect and, if necessary, destroy hostile craft in orbit. System concept is based on studies conducted at GD/Pomona for past several years.

Three-Man Craft Seen For Patrolling Space

A manned anti-satellite system to inspect and, if necessary, destroy hostile craft in orbit was described earlier this month by E. E. Honeywell, General Dynamics/Pomona preliminary design engineer, during the Eighth Symposium on Ballistic Missile and Space Technology at U. S. Naval Training Center in San Diego.

Honeywell's paper, based on studies conducted the past several years at GD/Pomona, was presented at the symposium sponsored by Air Force Systems and



ENTRY VEHICLE — Three-man command module is lenticular in shape and only portion of proposed anti-satellite system which would re-enter atmosphere.

Ballistic Systems Divisions. Approximately 1,200 representatives of industry and nation's military attended the three-day conference.

The anti-satellite concept proposes launching of a saucer-shaped, three-man spacecraft when a possibly hostile satellite has been detected. The spacecraft crew would have the mission of inspecting the satellite to determine if it presents a danger to U. S. security and then possibly destroying it.

The three-man craft would enter the same orbit as the suspect satellite but would not approach it closely—50 miles was given as a good distance to maintain. This would protect the three men in the spacecraft from attack by the potentially hostile satellite.

The satellite could then be inspected through telescopes and by electronic means.

However, there would be times when the satellite could not be inspected adequately from this distance, as, for example, when it is in the shadow of the earth. In these cases, it is proposed that small, unmanned "inspector/killer" mechanisms be released from the parent spaceship to approach the satellite closely.

The inspector/killer would be equipped with various devices for inspection including floodlights and television. It would also be able to fire an explosive charge to "kill" the satellite.

Honeywell described a 29,000-pound spacecraft as able to maintain three men in orbit for three days. It would carry four inspector/killer mechanisms.

The craft, Honeywell said, could be launched by the Titan III, Air Force space launch vehicle, now under development.

The saucer-like, or lenticular, shape for the three-man spacecraft was chosen because of advantages it would present upon re-entering the atmosphere and because it would save on weight. The craft would carry wing-like stabilizers for use during final phases of its flight.

Little Joe Suppliers Briefed by GD/Convair

Representatives of 50 companies, all suppliers for the GD/Convair-built Little Joe II launch vehicle, attended a film presentation and conference at the division last week.

Shots of the Little Joe II first flight at White Sands Missile Range, N.M., in August highlighted the progress report.

Briefings on status were given by J. B. Hurt, Little Joe II program manager; G. W. Zahrte, manager of material; W. L. Johnson, engineering reliability; M. I. Edelstein of the Little Joe II launch operations group.

JPL Representative For Quality Named

Eugene Redlin has been named GD/Electronics-San Diego's quality assurance representative for all Jet Propulsion Laboratory contracts, according to an announcement by H. J. Stuart, GD/E manager of reliability and quality control.

GD/E has an order for six S-C 3070 high-speed computer printers for the California Institute of Technology's JPL, Pasadena, Calif.



"I was hoping you'd be packing my lunch . . ."

CONVAIR MAN EARNS STATE FAA HONORS FOR WIRE INSPECTION

A simple and effective method of detecting invisible defects in aircraft wire, developed by a General Dynamics/Convair quality control expert, has been recognized by the Federal Aviation Agency as one of the outstanding contributions to aircraft safety for the year of 1962.

Chester W. Owen, Dept. 48 inspection assistant supervisor and 15-year GD/Convair man, this week received the FAA's Aviation Mechanic Safety Award as the winner in the State of Cali-



AWARDED — Chet W. Owen wins FAA honors for procedure.

fornia. The awards program was established by FAA Administrator N. E. Halaby to honor aviation mechanics making outstanding contributions to air safety, either in the category of aircraft design or improvement or development of a significant maintenance or inspection procedure.

As state winner for his new inspection procedure, Owen now is eligible for the regional contest. National winner is chosen from 14 regional candidates.

The problem of defective aircraft wire could be a serious one with the faster and faster speeds of jet aircraft flying at high altitudes, and will become increasingly more critical in the missile era, explained W. J. Martin, GD/Convair director of reliability.

During Owen's experimentation to work out a simple means of finding jacket breaks or punctures before wire harnesses are installed in the craft, he discovered that dye or fluorescent penetrants would show up specific areas at point of damage. By using fluorescent penetrant, all punctures, no matter how small or what configuration, are made visible by a large band of color (up to an inch long) beneath the jacket when viewed under a "black," or ultraviolet, light.

From that point it is a simple step to locate the culprit puncture under high-powered magnification, and to identify and correct the cause.

"This method of testing now is used throughout GD/Convair on all jacketed wire in receiving inspection, in electric bench fabrication, and in final assembly as a foolproof nondestructive inspection technique," said Martin. "It has aided materially in guaranteeing quality of manufacture with associated benefits of safety and insured service life."

The method will be circulated to all aircraft companies in an FAA advisory circular titled "Jacketed Aircraft Electrical Wire."

Also, a series of slides accompanied by a taped step-by-step explanation of the inspection procedure has been prepared by Owen for showing to interested groups.

"The Study of Environment on Aerospace Electric Wire," already has been presented by Martin at the General Dynamics Quality Control Panel meeting at Groton, Conn., last month and again on Oct. 16 at the symposium for Advanced Techniques for Naval Aircraft Electric Systems in Washington, D.C. It was to be shown this week by Owen at the San Diego meeting of the Society for Nondestructive Testing.

'Fiddling' Pays

Home-Built Plane Test Flown; Designed by Pencil Sketches

Three years of "fiddling around" recently paid off in a first-flight for Ken Morris in his own single-engine airplane.

"That's about how long it took me to design the plane, assemble parts and build it in my garage,' said Morris, assigned to GD/Fort Worth's AFPR engineering support.

Morris' first flight was a 15-minute affair—four leisurely circles around Russell Field, where he stores the red-and-white airplane. It is over 17 feet long, has a wing span of 21 feet, 5 inches, and weighs 820 pounds.

Total cost of the plane was over $800, Morris estimated. Not bad for an airplane that has been commercially evaluated at about $4,500.

"I got most of my parts from dealers in the area and from old aircraft," Morris said. Some of the parts were acquired as the result of shrewd trading. Example: an entire set of cowling fasteners for a cigar, "It just happened to be the dealer's brand," Morris said.

Although Morris doesn't fly by the seat of his pants, he admittedly builds airplanes somewhat along these lines. His "blueprints" consisted of rough penciled sketches on a half-dozen pieces of wrapping paper.

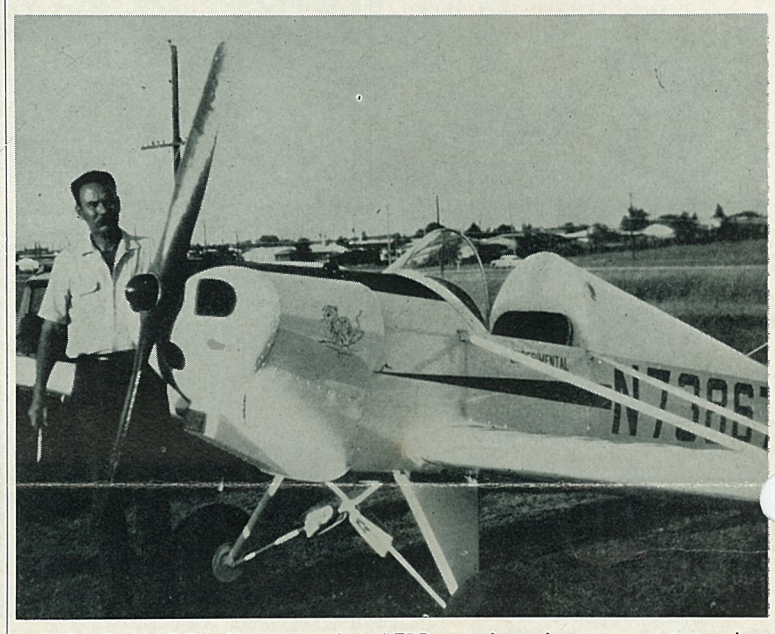
His "flight-test program" involved breaking ground slightly during four taxi runs, just to "get the feel of the plane."

Actually, Morris is an experienced builder—and pilot. He constructed his first airplane, a primary glider, back in 1940. He has also logged about 3,500 hours of flight time. Many of these were in B-17s and B-29s during World War II. He also saw service in Korea.

Morris admits to acquiring much of his manufacturing wherewithal while a member of the DAL-WORTH Chapter of Experimental Aircraft Association. Several GD/Fort Worth types are members of the association; they build and fly planes for the fun of it.

Morris' enthusiasm for aviation is shared with varying intensity by his wife and two children.

His spouse accepts his weekend-pilot status "philosophically." His 17-year-old son, a high school student, is ready to get his private flying license.



HOME MADE—Ken Morris, AFPR engineering support, makes post first-flight inspection of airplane he built in his workshop over three-year period. Single-engine plane, put together from old aircraft parts, cost $800; is evaluated at $4,500! Morris built first plane, a glider, over 20 years ago.

Fifth Atom Sub Launch of Year Set For Nov. 2 at Electric Boat

A nuclear submarine construction record will be established Nov. 2 at Electric Boat division of General Dynamics Corporation with the launching of the Polaris submarine Ulysses S. Grant at Groton, Conn.

The Grant will be the fifth atomic-powered submarine launched by the shipyard since the beginning of this year. The previous record was set in 1959, when the yard launched three nuclear submarines.

During 1963, Electric Boat has launched the Polaris submarines Nathan Hale, Daniel Webster and Tecumseh, and the nuclear attack sub Flasher.

Sponsor of the new 7,000-ton Lafayette class submarine will be Mrs. David W. Griffiths of Arlington, Va., President Grant's great-granddaughter. The 425-foot long submarine will be launched in the Thames River.

Prospective commanding officer of the Grant's blue crew is Cdr. John L. From Jr. of Boise, Idaho. His gold crew counterpart is Cdr. C. A. K. McDonald of Kezar Falls, Maine.

A former commanding officer of the gold crew of the George Washington, Cdr. From was the first commanding officer to make five Polaris patrols and received Navy Unit Commendation.

Convention on Military Electronics To Stress Space Agency Participation

With emphasis on military and space agency participation in the fifth National Winter Convention on Military Electronics to be held in Los Angeles Feb. 5-7, high interest in exhibits is anticipated.

C. D. Perrine, General Dynamics/Pomona executive vice president, general chairman, anticipated a record attendance at the three-day meeting which drew more than 4,000 in 1963.

Of the 63 booths available, 50 will be allotted to industry. Admission to the exhibit area in Ambassador Hotel, convention headquarters, will be free to government and military personnel.

High-ranking government officials will participate in the convention, for which the theme, "Weapons System Selection — 1964," will be carried out in papers on systems requirements, technical feasibility and cost effectiveness.

Secret sessions are scheduled in addition to confidential and unclassified presentations to assure the greatest depth and scope of technical material.

The convention is sponsored by the National Professional and Technical Group on Military Electronics, and the Los Angeles district of the Institute of Electrical and Electronics Engineers.

6 106 1

Business Backlog Increases and Income Continues to Climb

Consolidated net income of General Dynamics Corporation for the nine months ended Sept. 30 amounted to $41,892,218 or $4.19 per common share, Roger Lewis, president, announced late last month. This compares with $33,992,194 or $3.40 per common share during the same period in 1962.



Roger Lewis

Earnings for the third quarter of 1963 were $15,857,442, or $1.59 per common share compared with $11,147,777 or $1.11 per common share in the third quarter of 1962.

Net sales for the first nine months of 1963 amounted to $1,036,460,597 by comparison with $1,498,642,793 for the equivalent period last year. Net sales for the third quarter were $330.281,723 compared with $441,247,089 during the same quarter last year.

Lewis pointed out that General Dynamics' earnings during the first three quarters of 1963 and all of 1962 were not subject to United States income taxes as a result of carrying forward the unused portion of the loss reported by the company in 1961.

Without the loss carry forward, he said, earnings for the first nine months of 1963 would have approximated $23,100,000 or $2.31 per share compared with $17,700,000 or $1.77 per share during the equivalent period in 1962. Net income for the third quarters of 1963 and 1962 would have approximated $8,600,000, or $.86 a share, and $5,700,000, or $.57 a share, respectively.

Lewis said that the sales volume for the year was expected to continue at approximately the same rate indicated for the nine months. The flow of new business continues at satisfactory levels, he said, with new orders booked during the first nine months approximately 18 per cent higher than those received during the same period of 1962.

Backlog of firm orders on Sept. 30, amounted to $1,185,000,000, an increase of 20 per cent over the $984,000,000 backlog on the same date a year ago. Neither figure includes orders expected to be funded or negotiated as part of government programs already authorized.

Lewis reported that development of the F-111 bi-service fighter-bomber was progressing on schedule at the company's Fort Worth division and that 23 other industrial companies had been selected as subcontractors for components of the advanced weapon system.

The Report to Share Owners for the nine months ended Sept. 30, 1963, mentioned that the F-111 bi-service fighter-bomber is progressing on schedule at Fort Worth division and called attention to the recent Tokyo to London flight of a B-58 (also built

(Continued on Page 3)

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR and GD/ELECTRONICS)

GENERAL DYNAMICS
NEWS

Vol. 16, No. 23 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, November 13, 1963



"THEY LOOK TO YOU"—Children, aged, handicapped, lonely benefit from Con-Trib-Club donations made through payroll deductions. Typical of many agencies supported by United Community Services funds—and help from GD donors—are (top left) Neighborhood House playground where lively youngsters can play their games safely off crowded streets. Center fills social, recreational needs of underprivileged children—grownups, too—in overcrowded areas. At top right, elderly grandmother is visited by qualified nurse under Visiting Nurses Association program which provides skilled nursing care wherever it is needed without regard to ability to pay. At lower left, boys attached to military services and far from home can find fun and companionship in United Service Organizations. At lower right, little ones, afflicted with dread cerebral palsy are helped as much as humanly possible in United Cerebral Palsy Foundation therapy centers.

$31 Million Follow-on Order Signed

A $31 million follow-on subcontract to General Dynamics/Convair for manufacture of 127 tail sections for the Air Force C-141 jet cargo plane was announced late last week.

GD/Convair President J. H. Famme affixed his signature to papers finalizing the contract last Friday at Lockheed-Georgia, a division of Lockheed Aircraft Corp., which is the prime contractor for the jet cargo craft. Also on hand for the ceremonies were other members of his staff, including J. M. Adamson, C-141 program manager.

The current award brings total C-141 subcontract work at GD/Convair to more than $40 million and extends deliveries through June of 1966.

Under the initial subcontract awarded in October, 1961, GD/Convair designed the huge empennage and manufactured five production units as well as fatigue and static test articles.

All empennages built under the initial subcontract have been delivered to Lockheed-Georgia's Marietta plant on or ahead of schedule since the first one moved out of San Diego in March of this year.

When mated to the fuselage, the T-shaped tail towers over 39 feet from the ground. Ladders are built into the fore and aft sections of the vertical stabilizer to facilitate servicing of systems on the horizontal stabilizer.

The horizontal stabilizer has a 50-foot span, about the same as the total wing span of a World War II fighter plane. Wing span of the huge C-141 is more than 160 feet.

Overall, the C-141 Starlifter is 145 feet long. Its maximum takeoff weight is 257,500 lbs., and maximum payload exceeds 70,000.

With the exception of the leading edge and the high-strength steel pivot fittings that lock the horizontal stabilizer to the vertical, the empennage structure is entirely of aluminum.

First flight of the C-141 is scheduled this December.

Two Transfer To New York

Carl J. Oles, labor relations administrator at GD/Fort Worth, has been named Corporate director of labor relations, and H. S. Wiseman, assistant factory manager of assembly at GD/Fort Worth, has been appointed Cor-



H. S. Wiseman



Carl Oles

porate director, industrial engineering and operations support.

Oles reports to A. A. Hendrix, Corporate vice president-industrial relations, and Wiseman to R. M. Hatcher, Corporate director, operations service.

Oles joined GD/Fort Worth in December 1954 as an industrial relations analyst. He has been labor relations administrator since 1957.

After completing undergraduate work at the University of Maryland and George Washington University, Oles received his

(Continued on Page 3)

GD/Electronics and GD/Convair Kick Off Con-Trib Drive Monday

Next Monday (Nov. 18) is kickoff day for the annual Con-Trib-Club membership roundup drive at GD/Convair and GD/Electronics divisions.

Main purpose of the week-long campaign which ends Nov. 22, is to give all non-members an opportunity to join. Present members are encouraged to increase their contributions.

Tab cards will be distributed on opening day by supervision at both GD/E and GD/Convair facilities. Employees will be asked to complete the cards, indicating whether or not they wish to participate in the program and how much they wish deducted for Con-Trib each pay period.

All cards must be filled out and returned to employee services locations by next Friday.

The current drive is wholeheartedly supported by management at both San Diego divisions—who urge that everyone contribute his share—and by labor unions representing GD/E and

(Continued on page 2)

Safety Crib Open For Half Days Only

Effective this week the GD/Convair safety crib in Bldg. 32 at Plant 1 will be open half days only, announced M. C. Val Dez, senior safety engineer.

Safety crib hours are now from 8 a.m. until noon.

Protective equipment required for emergencies can be obtained by contacting Val Dez' office, ext. 464.

GD/E Will Show S-C 4020 Firsts

General Dynamics/Electronics-San Diego is demonstrating two firsts, an advanced version of its S-C 4020 Computer Recorder and a new concept in automation, a computer-made movie, at the Fall Joint Computer Conference in Las Vegas, Nevada, this week.

On display for the first time is a S-C 4020 equipped with a new "quick look" output option.

Now an operator can check selected pages of a program in less than a second without the normal turn-around time associated with developing microfilm or photorecording paper output.

The "quick-look" option involves a compact automatic developer, a mechanical paper-cutting and stacking unit.

(Continued on Page 2)

Two More Little Joe IIs Ordered For Use in Apollo Test Program

General Dynamics/Convair has received a contract amendment in the amount of $2,247,174 for two more Little Joe II launch vehicles to be used in NASA's Apollo test program.

Addition of the two vehicles brings procurement costs for Little Joe II boosters to nearly $9 million. This includes about $500,000 for design and development of two launchers, and their installation at the White Sands Missile Range, N.M.

The two new vehicles will be used in a high-altitude abort test of approximately 60,000 feet to check out capability of the launch escape system to separate the command module from the booster.

With the addition of the two, GD/Convair will build a total of six vehicles for NASA Manned Spacecraft Center's Apollo test program. The new version differs from the original four in that it will contain attitude control systems and instrumentation to analyze the control system.

Kits Ordered For Updating

A contract for modification kits to provide for electronic updating of F-106s was received last week by General Dynamics/Convair from the Air Force.

The contract, awarded by San Antonio Air Materiel Area, amounts to $2,762,500 with additional funding for spares.

Specifically, the task calls for components necessary to electronically update F-106 aircraft to present-day weapon system fire control capabilities.

In addition, kits will be assembled for modification of mobile training units.

Deliveries will start in April of next year and continue until the first of 1965.

GD/Convair Son High In Merit Standings

Roger Hedgecock, son of Les Hedgecock of GD/Convair motion picture lab, is one of five St. Augustine High School seniors receiving commendations for their high standings in National Merit Scholarship qualifying tests. Although not semi-finalists, all scores were high enough to merit special recommendations to any colleges they seek to enter. Roger is attending St. Augustine on a scholarship he received on his scholastic standing at St. Agnes Parochial school.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period Nov. 1 through Nov. 15.

Thirty-five-year: Dept. 6-100, G. Garner Green.

Twenty-year: Dept. 6-5, R. L. Fefferman; Dept. 43-14, Edith W. Danos; Dept. 48-10, M. E. Walker; Dept. 129, Alma M. Emmons; Dept. 171, H. C. Killgore.

Fifteen-year: Dept. 6-6, D. O. Whitney; Dept. 14, Louisa G. Barton, Linder Erickson; Dept. 23-1, Naomi R. Hastings; Dept. 25-5, D. L. Thorpe; Dept. 42-5, June R. Cass; Dept. 131, J. E. Turner; Dept. 171, L. E. Caudill, F. M. Holt.

Ten-year: Dept. 3-1, S. R. Sharp; Dept. 6-2, W. E. Service; Dept. 16, A. F. DiJoseph, D. Q. Henry; Dept. 97-3, J. R. Alameda; Dept. 115, A. E. McFarland.

GD/ELECTRONICS

Twenty-five-year: Dept. 74-30, K. A. Seely.

Ten-year: Dept. 71-00, M. J. Blaquiere.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Oct. 25, and Nov. 1.

Dept. 14, J. A. Chaves, $11.10; R. H. Feeley, $33; V. L. Waitman, $10.

Dept. 128, R. F. Lanzo, $22.20; R. B. Walling Jr., $17.40.

Dept. 131, A. V. Elo, $10.

Dept. 141, C. F. Hagata, $14.90.

Dept. 400, E. L. Raymond, $10.

Cost Improvement Proposals approved for the same periods.

Dept. 42, R. L. Ingraham.

Dept. 48, B. J. Price.

Dept. 101, H. A. Mohr and H. M. Woodard, joint proposal.

Dept. 119, L. W. Stamper, two proposals.

Dept. 131, W. M. Clapp.

Births

GD/ELECTRONICS

OROSCO—Daughter, Mary Teresa, 6 lbs., 11½ oz., born Nov. 3 to Mr. and Mrs. S. E. Orosco, Dept. 72-11, Plant 1.

Retirements

CONVAIR

DARE—Oral W., Dept. 140. Seniority date Oct. 2, 1950, retirement effective Oct. 21.

DE WITT—Fred, Dept. 14-4. Seniority date March 11, 1948, retirement effective Oct. 18.

WILKINSON—James E., Dept. 218. Seniority date Oct. 17, 1947, retirement effective Nov. 5.

GD/ELECTRONICS

GRIMSLEY—Robert F., Dept. 72. Seniority date Oct. 11, 1950, retirement effective Oct. 31.

New-Type Fin For Little Joe II Proves Structural Integrity

A new-type fin which will go on the second version of Little Joe II launch vehicle proved its structural integrity in recent static proof testing at GD/Convair.

The attitude control fin, which will replace the fixed fin on later-model Little Joe IIs, sustained loads up to 57,993 pounds without damage, said Ed Schiff, structures lab assistant group engineer. Deflections also were measured during loading.

This fin (four to a vehicle) is designed for control of the Little Joe II during long range missions in high atmosphere or out-of atmosphere conditions. Its function will be to maintain a desired path or to change the flight path upon command, in contrast to the fixed fin which has but one purpose—to stabilize the vehicle and keep it on course.

In a second portion of the proofing tests, the elevon hinge-bearing friction was evaluated with a range of loads applied at different angles. The fixed section of the fin was loaded while the movable elevon was operated. At each position measurements were taken of the force required to overcome the friction in the hinge bearings.

Results showed that the elevon did not bend or cock enough to cause any appreciable amount of friction in any position.

Test engineers directing the proofing at the ramp lab location were R. W. Gilbert and R. A. Sherman.

The test fin has now passed to the Astro dynamics lab at Plant 1 for functional testing.

GD/E Will Show S-C 4020 Firsts

(Continued from Page 1)

In addition to this new capability, the advanced S-C 4020 demonstrated will have a new high density tape adapter option. This option allows the high-speed recording system to accept data from magnetic tape at speeds up to 62,500 six-bit characters per second.

Animated movies shown at the conference were produced automatically on a S-C 4020 with a camera photographing series of drawings appearing in rapid succession on the face of the cathode ray tube.

One of the films depicts a communications satellite tumbling through space to show its various attitudes during orbit. It was created on a S-C 4020 operated by Bell Telephone Laboratories, Murray Hill, N. J.

The satellite is represented as a domino-shaped box with sides identified by distinctive symbols. Each frame of film shows an accurately-drawn three-dimensional representation of the satellite in slightly different positions.

Before production of the film a large-scale scientific computer was programmed to produce a magnetic tape containing data necessary to study the satellite's position and attitude. The tape was then fed to the S-C 4020 which converted the digital data into line drawings representing the satellite.

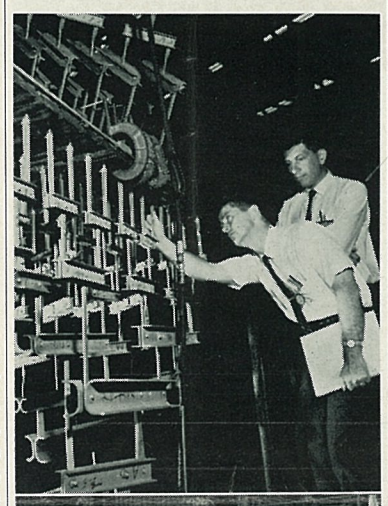
Another film, produced by the same technique, shows the earth rotating on its proper axis as viewed from above latitude 20 degrees in outer space. The drawings are complete with geographical details such as small islands and the North Pole.

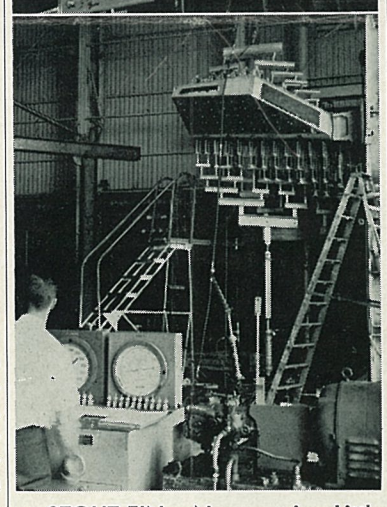
Animated movies also are being produced on the versatile recorder to depict events such as simulation of shock waves and explosions, and missile trajectories. S-C 4020 users say that computer-made movies are far more effective than written reports in communicating results of mathematical research.

Ira Sykes to Head GD/Pomona Redeye

Ira D. Sykes Jr., manager of planning for GD/Electronics—San Diego, has transferred to GD/Pomona division as Redeye program administrator, effective Nov. 4.

Sykes joined the Corporation at GD/Pomona in 1956 and served as program planning administrator before his transfer to GD/Convair as manager of long range planning in 1961. He has been with the GD/Electronics division the last year and a half.





STOUT FIN—New version Little Joe II fin withstands terrific loads in GD/Convair structures laboratory to prove structural integrity. Below, Dick Gilbert, test engineer, checks measurements during evaluation of hinge-bearing friction while movable portion, elevon, is set at different angles. In upper shot, Gilbert, and Ed Schiff, assistant group engineer, check whiffletrees bearing loads.





CON-TRIB VISITS—Members of GD/Convair and GD/Electronics Con-Trib-Club Committees see for themselves where donations go in visits to UCS-supported organizations. In lower shot, James Wheeler and C. E. Murdock of GD/Electronics Employees' Con-Trib Committee watch Mrs. Evonne Eick, president of San Diego Braille Club, operate Braille writer, while other members "read" books in Braille. Club promotes social and welfare activities for blind. Top photo shows GD/Convair Con-Trib Committee members E. E. Larsen, Ralph Montgomery, Dean Strange in Armed Forces YMCA recreation room looking on as attractive volunteer offers young seamen choice of games.

GD/Electronics and GD/Convair Kick off Con-Trib Drive Monday

(Continued from Page 1)

GD/Convair employees. These are International Association of Machinists and Engineers and Architects Association at both divisions and International Brotherhood of Electrical Workers at Convair.

"This is the easy way to help people more needy than we," stresses J. K. Field, GD/Convair manager of personnel services and chairman of the Convair drive.

J. W. Swank, GD/E manager of industrial relations who heads GD/Electronics Con-Trib campaign, adds, "If we all sign now for Con-Trib membership, our charitable obligations are discharged for the year."

Both GD/Convair and GD/Electronics Con-Trib-Clubs have just completed fulfilling last year's pledges to the United Community Services, which includes the majority of philanthropic agencies aided by Con-Trib-Clubs.

GD/Convair gave $40,000 and GD/Electronics, $10,000.

In addition, individual donations are given throughout the year to worthy groups not included in UCS, upon approval of Employees' Con-Trib-Club committees at each division.

Families in trouble within the company can call on their own Con-Trib for help through the Emergency Aid Fund into which 10 per cent of all receipts are channeled.

Both divisions are aiming at 100 per cent membership!

Dr. N. A. Finkelstein Honored by Museum

Dr. N. A. Finkelstein, vice president—research and engineering at GD/Electronics, Rochester, N.Y. was honored this week by that city's Museum of Arts and Sciences for contributions to the museum's fields of interest.

He was one of six to receive fellowships in ceremonies yesterday (Nov. 12). Dr. Finkelstein was 1962 chairman of a Rochester symposium on science in the space age and has authored several scientific articles.

Before joining General Dynamics Corporation in 1960 he headed the research and development branch of Bausch & Lomb, Inc.



CLUB HONORS — At left, H. B. Day, graphic reproduction supervisor, receives Mug of Month at October GD/Convair Management Club meet from H. R. Kennedy, chief of publications. In other photo, top savers for August and September receive MacSave-it trophies from D. C. Wilkens Jr., industrial relations director. At far right is August winner, Willard Martin, Dept. 131 assistant foreman, whose CIP saved company $10,742. At left are Eric Torp (Dept. 91-4) and Ken Wulfemeyer (Dept. 3-2) who shared September honors with joint CIP worth $118,850 in annual savings to division.

General Dynamics NEWS

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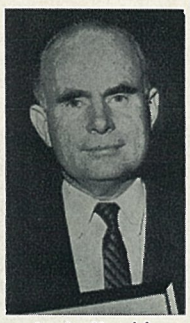
Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

* * *

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High 'People Capability' Seen as Dynamics Goal

Today's jobs require greater ability, more know-how and more efficiency than the same jobs ten years ago, and the trend is likely to continue, Algie A. Hendrix, General Dynamics vice president-industrial relations, told conferees in Washington, D. C., last month.



A. A. Hendrix

He was speaking before the Department of the Navy's Industrial Relations Institute, specifically on "Industrial Relations-Responsibilities and Opportunities."

Hendrix strongly emphasized the need for individuals to face the challenge of change and adapt to new demands as essential to their careers as well as advancement. He defined the General Dynamics Corporate goal as "building and maintaining a lean and effective organization with a recognition of, and a fast response to, our customers' needs." For the industrial relations organizations he narrowed this down to the goal "to establish, preserve, develop, challenge and retain the highest possible level of 'people' capability."

"People, money, machines and facilities obviously make up the assets of any enterprise," he continued. "In General Dynamics 'people assets' (cohesive units of managerial and technical know-how) are our most important asset."

Regarding the need for versatile and adaptable personnel, Hendrix called attention to the great fluctuations (expansion and contraction) of industrial employment over the years.

"In periods of rapid expansion we must have promotable people for higher level jobs; in periods of contraction we need people capable of assuming a combination of duties."

Asked to comment particularly on the labor relations aspects of industrial relations, Hendrix reported that although General Dynamics deals with 33 different unions and operates under 158 individual union agreements, only 181 man-days have been lost in 1963 due to strikes.

"I feel this indicates a good job on the part of management, including supervision, the union representatives and the employees of General Dynamics.

"We strive for labor peace," he said, "but at the same time recognize that there are some things worse than a strike . . . We go all out to protect the responsibility and right to manage the business and be competitive at the market place. We believe this to be essential in meeting our responsibilities to our employees, our customers and our shareowners."

Two Transfer GD/FW to New York

(Continued from Page 1)

law degree from the National University School of Law in Washington, D. C. He also holds a master of industrial and labor relations degree from Cornell University.

Oles was admitted to the District of Columbia Bar in 1951 and was in private practice in Washington, D. C., for two-and-a-half years.

He served in the U. S. Navy from March 1943 to September 1946.

Wiseman joined GD/Fort Worth as assistant superintendent in 1956. He subsequently served as superintendent, industrial engineer, and project industrial engineer. In 1960 he was promoted to assistant factory manager.

Prior to joining GD/FW, Wiseman served in the factory departments at Boeing, Wichita. From 1951 through 1956 he served as General Superintendent of the Ford Aircraft plant in Kansas City, Mo. He served in the U. S. Army from 1944 through 1946.

★ ★ ★

Daniel L. Martin has joined the staff of the General Dynamics vice president and chief counsel as assistant counsel, reporting to Roger I. Harris.

Martin, a 1950 graduate of Rutgers University, who received his law degree from University of Michigan in 1955, served as a lieutenant and radar observer in the Strategic Air Command prior to association with a New York City law firm for the last eight years.

★ ★ ★

James N. Sowers has joined the Corporate comptroller's department as a cost analyst, reporting to R. C. O'Sullivan.

A former captain in the Air Force and graduate of the University of Michigan, Sowers has held industrial engineering positions in Ford Motor Co., was with American Airlines as assistant vice president, and technical services and assistant comptroller, and most recently was vice president of manufacturing services for Henry Golightly and Co., management consultants.



"I don't believe we've met."

BUSINESS BACKLOG INCREASES, INCOME ALSO SHOWING RISE

(Continued from Page 1)

at Fort Worth). Non-stop, the B-58 with three-man crew covered the distance in eight hours, 35 minutes, cutting the previous record in half. It was the longest supersonic flight on record.

Successful first firing of Little Joe II, built by Convair division, also was recalled in the report as well as the recovery of Electro Dynamic division after fire destroyed its Bayonne, N.J., plant. The division now is back in active production at Avenel, N.J. Electro Dynamic builds high precision motors and generator sets and recently added the Dynapak line of high velocity metal forming equipment (previously produced by Advanced Products department) and the line of vaneaxial fans (previously produced by Electric Boat division) to its activities.

The report also calls attention to the all-terrain, all-weather CL-91 vehicle developed by Canadair Limited, currently undergoing testing by the U.S. Army. (See photo at lower right.)

Second Centaur Pad Authorized

Specific contract details for completion of a second Centaur launch pad at Cape Canaveral were announced recently by National Aeronautics and Space Administration's Lewis Research Center.

The $14,451,485 contract held by General Dynamics/Astronautics covers activation of the facility, Pad 36B.

By adding a second pad in addition to the original 36A, Pad 36B will provide "double-barrelled" capability for the Cape's Centaur launch installation, Complex 36.

The new facility includes a service tower, propellant storage tanks and transfer lines, and electrical systems to test and activate the vehicle, fuel it by remote control, and launch it.

A common control center serves both pads. With completion of 36B, Centaur vehicles can be launched alternately from the two pads.

Walter Williams Gets Key NASA Post

Dr. Walter C. Williams, who managed operational phases of Project Mercury for National Aeronautics and Space Administration, has been named NASA's operations director for all manned space flight missions.

Appointed to the post of deputy associate administrator for manned space flight operations at NASA Headquarters, Washington, D. C., Dr. Williams was formerly deputy director for mission requirements and flight operations at NASA Manned Spacecraft Center, Houston, Texas.

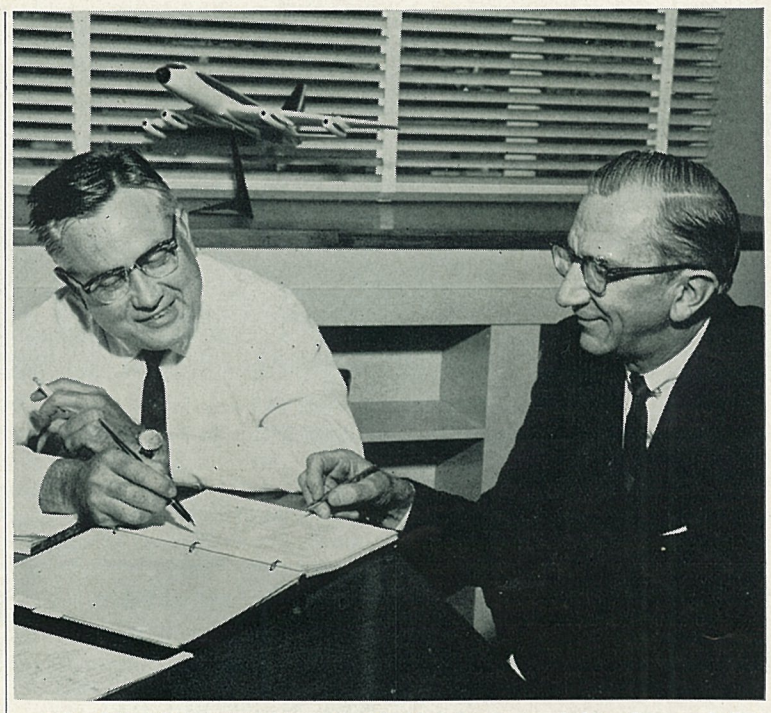
The new position was created as result of increasing complexity of NASA's manned space flight projects. It provides a key man to direct operations of the many organizations and installations throughout the U. S. and the world which contribute to the conduct of a flight mission.

Dr. Williams will have full authority and responsibility for conduct of the flights, with all NASA, Department of Defense, and other teams participating, reporting to him for direction.

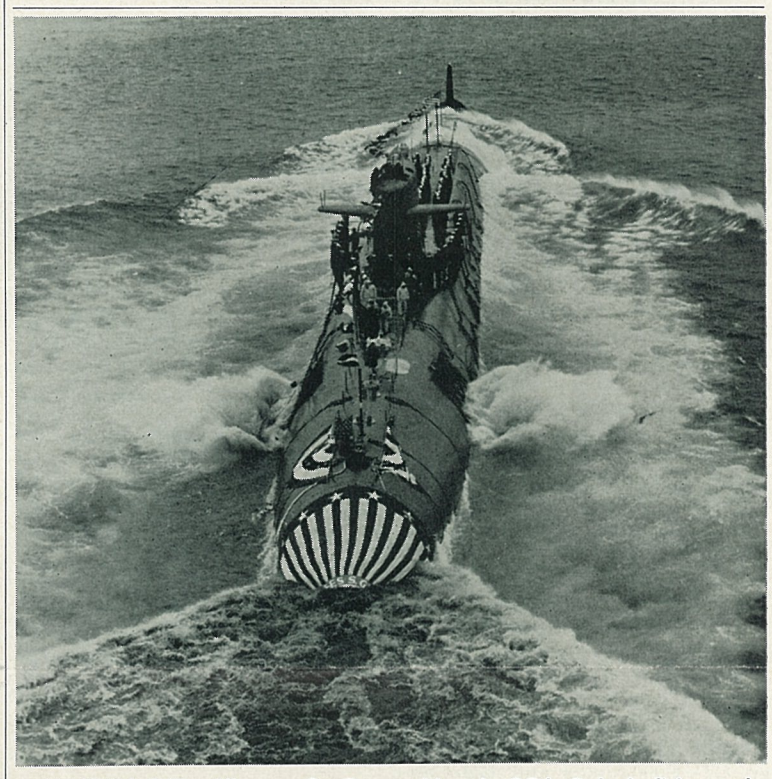
B-58 Leads Air Show Opening Fund Drive

A B-58 streaked across the Palmdale Air Force plant near Edwards AFB, Calif., last Saturday (Nov. 9) to open the Air Force-Community salute to the Antelope Valley United Fund drive.

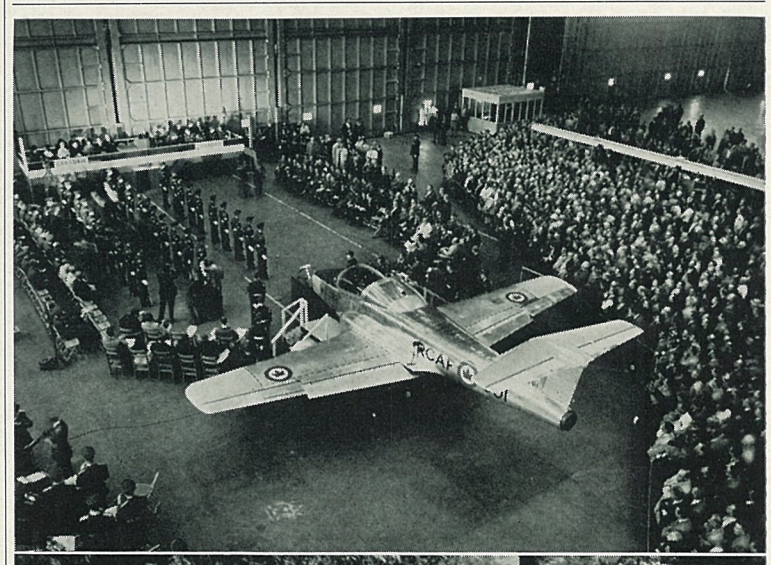
The Edwards' based B-58, built at GD's Fort Worth Division, triggered the two-hour air show by a maximum performance climb.



COAST CONFERENCE — E. H. Heinemann, right, General Dynamics vice president — program development, was on the West Coast recently for conferences, which included talks with Charles Frick, GD/Convair vice president-engineering, left.



MAIDEN DIP—Ulysses S. Grant, Navy's 25th Polaris-firing submarine, churns water of Thames River during launching Nov. 2 at General Dynamics/Electric Boat, Groton, Conn. Vessel is 425 feet long and displaces 7,000 tons.





CANADAIR PRODUCTS — In top photo, Canadair Limited employees watch as first of 190 Canadair CL-41A jet trainers is officially named "Tutor" by Mrs. C. R. Dunlap, wife of Air Marshal Dunlap, Chief of Air Staff of RCAF. In lower photo is CL-91, all-terrain, all-weather vehicle developed by Canadair, currently under test by U.S. Army as personnel carrier.



990A WELCOME — Garuda Indonesian Airways' first Convair 990A received an all-out welcome on arrival at Djakarta latter part of September. In first photos received of ceremony: (at left) O. W. Harper, GD/Convair manager of customer service; Bob Poor, General Electric Co. representative; W. W. Whittier, GD/Convair spares estimating supervisor; and John Doig, chief of service parts, descend ramp on plane's let-down at Djakarta. In shot at right are lei-decorated Garuda flight crew members and (at far right) A. J. Chitiea, GD/Convaircontroller as company representative, and Mrs. Chitiea.

Veteran in Aircraft, Missile Tooling Dies

Requiem Mass for Lloyd H. Larivee, general foreman of tool and special detail parts manufacturing at General Dynamics/Pomona, was offered Oct. 31 at St. Joseph's Catholic Church in Pomona.

Larivee died in Pomona Valley Community Hospital Oct. 28 after two and a half weeks of illness.

Larivee joined Airplane Development Corporation at Glendale in 1933 and in 1936 moved to Vultee Aircraft at Downey. He was Vultee's representative stationed in Moscow, Russia, on tooling projects in 1937-38. When Downey Division closed in 1947, Larivee moved to Pomona and returned to the Company at Pomona Division in September, 1952.

Toastmistresses Gather at Dinner

Delta Toastmistresses gathered last Saturday evening (Nov. 9) at the home of their vice president, Toni Conklin, for a fund-raising spaghetti dinner. Proceeds will go toward club expenses.

A special Thanksgiving program is in the planning for the Nov. 26 meeting, said Barbara Macdonald, president, who urges all GD/Electronics and GD/Convair ladies to join in the speech club's activities.

Regular dessert meetings are held the second and fourth Tuesdays of each month at 7:30 p.m. in the Convair executive dining room. Information on meetings can be obtained from Barbara, GD/Electronics accounting department, ext. 1420, Plant 1.

Convair's Baseball Entry Now 2 and 2

Convair's baseball entry in the Industrial League stood 2 - 2 in games won and lost in first four weeks of play in the initial round.

It took two close ones from National City Oct. 27, 3-1; and Pacific Surplus the next week, 2-1. It dropped tilts with Oceanside and Shrock Construction.

GD Men Participate In Panel on Value

Among General Dynamics participants in the recent meeting of the Los Angeles Chapter of SAVE (Society of American Value Engineers) were Dan Macey of GD/Electronics - San Diego and Russell Babcock of GD/Astronautics.

Both were members of the panel, "Value Engineering in Procurement," chairmanned by William McMurry, in charge of value analysis at Motorola, Phoenix, Ariz.

Wrestling Coaches Sought by Schools

General Dynamics men in the San Diego area interested in earning small fees for refereeing high school wrestling matches, as well as those who would assist, on a volunteer basis, in coaching smaller grapplers, are being sought.

Experienced school, college or service referees are needed in local high schools and local boy's clubs. Those interested may contact Wayne Zook, ext. 1581, at Astronautics.

'Slow Break' Team Managers to Meet

Managers of teams intending to compete in the CRA plant "slow break" basketball tourney will meet this Friday, Nov. 15, at 4:45 p.m. at the Convair cafeteria snack bar on the east side of Overpass 1.

Pete Beyrer of CRA office said that team rosters must be turned in at that time. Eligibility rules will be discussed.

To date, six teams — three from Convair and three from GD/Electronics—have indicated that they will enter shop league play, said Beyrer. League opening date is set for the first Tuesday in December with games scheduled each week, except for holidays, thereafter. Play will be in Balboa Park's Muni Gym.

Annual Photorama Open to All Drivers

Drivers at GD/Convair and GD/Electronics are invited to try their luck in the coming Photorama V, sponsored by ARA Sports Car Club on Nov. 24.

Contestants will travel an 80-mile, all-paved route with a book of photographs as their guide. The rally is not confined to sports cars.

Awards to drivers and navigators of the top ten cars and all entries will get dashboard plaques.

Registration can be made through E. N. Yeaton, Astro main plant, ext. 1504. Early entry fee is $2.50; at post time (10:01 a.m. from La Mesa Bowl), $3.

'Fun Night' Scheduled For Club Members

Art's Roaring 20's will be the scene of GD/Convair Management Club's fun night next Wednesday, Nov. 20.

Members will pay $1.75 for a buffet supper and all the beer they can consume between 5:30 and 8:30 p.m. A film of comedy shots from motion pictures over the years will enliven the evening. Members attending are encouraged to stay to see the regular 9 p.m. floor show.

Service parts and technical publications are sponsoring the affair with tickets now on sale at all usual outlets.

NEW PROTOTYPE FACILITY FORMED

An Engineering Protoype Facility has been created at General Dynamics/Convair to provide support to the engineering department during development and research stages of new products, C. W. Frick, vice president-engineering, announced.

Heading the new facility as manager is N. R. Keough, who for many years has been closely connected with GD/Convair's experimental and development programs.


N. R. Keough

The new engineering support section (Dept. 6-31) will include the model shop mockup and prototype facilities and ramp test assist operations, formerly a part of Dept. 131.

Main responsibilities of the facility will be fabrication and assembly of protoype models and mockups; construction of engineering wind tunnel models; assists during research and development testing in engineering laboratories.

"Keough brings more than 30 years of prototype and related experience into the engineering organization," said Frick. "His knowledge and background will be of substantial benefit to engineering, not only during the prototype phases, but also in predesign and proposal preparation operations."

Reporting to him will be O. W. Bell as assistant foreman of engineering test laboratory support, and A. B. Oberg, assistant foreman, engineering model shop and mockup.

Keough joined the company at Vultee Field in 1940 and transferred to San Diego Division in 1947. He was made general foreman of experimental in 1954 and chief of Model 8 field operations late that same year. Since fall of 1961 he has been superintendent, successively, of development and modification, sub-contract production, experimental, and Little Joe II production.

Dept. 131, now responsible for Little Joe II, along with Depts. 133 and 140 have been assigned to F. H. McLaughlin, superintendent.



FAA AWARD—GD/Convair's C. W. Owen receives FAA plaque naming him "Outstanding Aviation Mechanic in California" for method of detecting defective wires. Presenting award on Oct. 28 was Ed Marsh, deputy director of FAA's Western Region, and William Barnard, representing California Aeronautics Division. At far right is W. J. Martin, GD/Convair director of reliability.

'Inside Look' At Border City Set For Nov. 23

Seldom-seen sights and little-known facts of Tijuana, Mexico, will be highlighted in a special tour of the neighboring Mexican city Saturday, Nov. 23.

The 12-hour sightseeing trip is arranged and conducted for General Dynamics people by James Hardison of GD/Convair Dept. 15.

It will take visitors off the beaten tourist trail and into the "real" sections of town. The route will take the chartered bus through the best residential areas, the commercial center of the city, to the Municipal Palace, headquarters of the city's government, and to such civic establishments as the Chamber of Commerce, post office, police department, national lottery, money exchange, new hospital.

Dinner will be served at the Tijuana Country Club. After watching jai alai at the Fronton Palace, the tour will wind up at a night club.

Cost of the entire trip, including transportation, dinner, all admission charges is $11 each.

Tourists will meet at Balboa Park's Conference Bldg. at 1 p.m. and return there at 1 a.m. Cars will be parked there and a San Diego Transit bus taken to the border.

Reservations must be called in to Hardison by next Monday (Nov. 18) at his home phone, 276-5805.

Garden Show Sets Record

Three participation records were shattered by the joint ARA-CRA Garden Club at its annual fall show in Balboa Park's Floral Association Bldg., Nov. 3.

Approximately 1,500 General Dynamics employees and park visitors viewed the show, open to the public between 1 and 6 p.m.

They saw a record number of total entries (418) in eight divisions, a record number of flower arrangements (49), and a record 176 rose entries. Corsage division attracted 12 entries, children's division, 9.

Best of Show awards went to Mr. and Mrs. T. J. Cunnion, GD/Convair Dept. 171, best button mums; Mr. and Mrs. E. L. Zimmerman, GD/Convair Dept. 401, best bloom in show; Mr. and Mrs. C. H. Splinter, GD/Astro Dept. 759, best daisy-type mums; Phyllis Files, GD/Astro Dept. 953, best corsage; Esther Barksdale, GD/Astro Dept. 015, best arrangement; W. D. Spann, GD/Astro Dept. 953, best rose; and Gary Volper, son of J. R. Volper, GD/Astro Dept. 661, best child's entry.

Best of Show winners received turkeys. In each class, first place winners were given garden hose; second place, insecticide spray; third place, a flower vase.

First place honors went to:

GD/Convair's Stella Dennis, Henry Boyd, Grace Zimmerman, LaVonne Splinter, Mrs. F. White, F. White, E. L. Zimmerman, Mrs. Henry Boyd, Dennis Zimmerman.

GD/Astro's Arnold Carroll, Gale Short, C. H. Splinter, Phyllis Files, T. J. Cunnion, Ona Mae Carroll, Esther Barksdale, Carlene Boychock, Mrs. Hershel Young, Andrew Volper, W. D. Spann, C. J. Lewis, J. E. Henderson.

Cafeterias to Serve $1 Turkey Dinner

One dollar will buy a big turkey dinner at Astro and Convair cafeterias the Tuesday before Thanksgiving, Nov. 26.

The special dinner will be served during lunch periods at cafeterias at Plant 1, Plant 19, Plant 71, and Pacific Hwy. locations, all operated by the Prophet Co.

Roast turkey and dressing will be the entree. Other menu items are whipped potatoes, giblet gravy, tossed green salad, buttered peas, roll and butter, pumpkin or mince pie, choice of beverage—and all for $1.

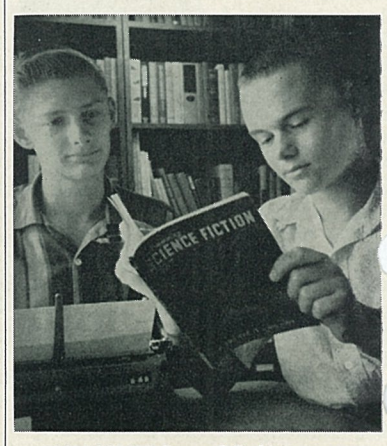
Saturday Schedule For Salvage Set

Saturday schedule for employee sales at GD/Convair and GD/Astronautics salvage yards at Plant 1 and Plant 71, respectively, is:

GD/Astro—Nov. 16, 30.

GD/Convair—Nov. 23, Dec. 7.

Sales hours are from 8 a.m. until noon.



PUBLISHERS — GD/Astro sons, Dean Sandin (left) and Bob Franson, both 17, evaluate piles of science fiction books and magazines for their new Science Fiction Review.

YOUNG PUBLISHERS START REVIEW

Two General Dynamics sons have launched a new publication, pointed directly to the many science fiction fans throughout the country.

Bob Franson, son of W. R. Franson of GD/Astro Dept. 140-3, and Dean Sandin, whose father, D. H. Sandin, is in GD/Astro Dept. 480-0, have established themselves as publishers of the Science Fiction Review.

In their professional-appearing four-page publication, issued every other week, the 17-year-old editors list and review the latest science fiction paperbacks and magazines. For their material they read more than 20 books a month sent to them by publishers in advance of newsstand release.

They already have a nationwide paid circulation of over 100 and hope to boost the subscription list to 1,000 by the end of the year.

Both boys are honor students in their senior year at Hoover High School and have qualified as National Merit Scholarship semi-finalists.

Discounts Extended For Skating Club

The joint ARA-CRA Ice Skating Club has arranged for extension of discount tickets at Mission Valley Ice Plaza through November.

Tickets are available only at employee services outlets, and entitle the bearer to a 25 cent discount at any skating session. When used at club sessions (each Thursday, 6:30 p.m.) they result in a total 35 cent saving, including the regular 10-cent discount for the private session.

No skating session will be held on Thanksgiving (Nov. 28).

More information on the club is available from President Barbara Gilliland, GD/Astro ext. 4041.

Joint Camera Club Sponsoring Contest

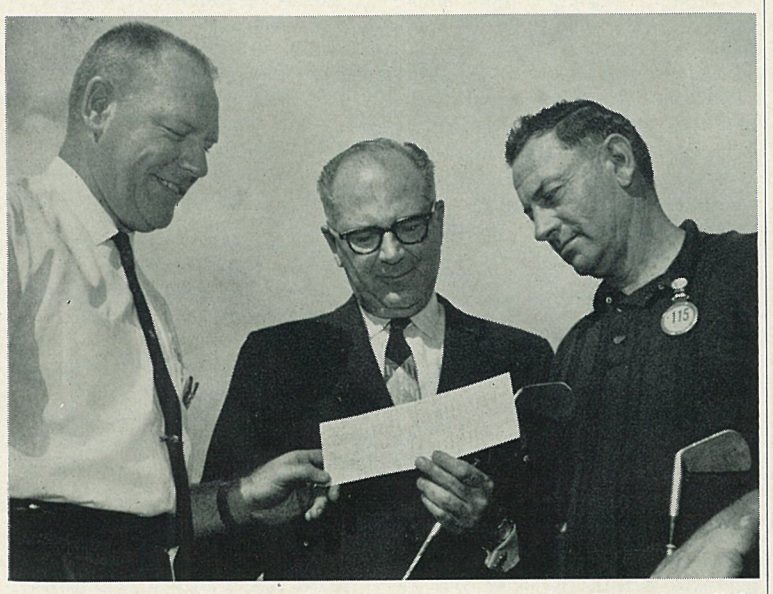
The joint ARA-CRA Camera Club will conduct its fourth quarterly contest of the year at its meeting, 7:30 p.m., Nov. 17 in Balboa Park's Photo Arts Bldg.

Members have been invited to enter four black and white prints or color transparencies. Slides and movies will be shown by members.

FENCING TOURNEY TO START NOV. 23

San Diego Fencers, to which several General Dynamics fencing enthusiasts belong, will host a men's and women's tournament, starting at noon, Nov. 23, in ARA Clubhouse auditorium.

Sports & Recreation



CRA CHAMPS—Al Reiter (far right), who won CRA plant links tourney, compares score with Ralph Way, runner-up (center), for benefit of CRA Commissioner Ken Wulfemeyer.

Al Reiter Defeats Way 2 and 1 in Championship

Two of CRA's top golfers stood one-two at close of play in the 23rd annual plant championship held over three Saturdays, Oct. 19, 26, and Nov. 2, at Carlton Oaks Country Club course. Forty GD/Convair and GD/Electronics golfers competed.

Al Reiter of Dept. 115 emerged new champion in the match play tourney as he took the first flight 2 and 1 over Ralph Way, Dept. 400. Reiter stroked a net score of 75. Way finished with a 78 and an eagle on No. 18 when he sank an 80-yard wedge shot, too late to count on the score.

In the second flight George Kureri of Dept. 115 won from Jim Ensign, Dept. 15, 2 and 1.

Third-flight winner was C. E. Shyler, Dept. 48, 3 and 2, over Terry Kell of Dept. 23.

A. M. Van Horn of Dept. 400 took the fourth flight 1 up from runner-up Ernie Damarus, also Dept. 400.

Winner of the fifth flight was Fred Maus of GD/Electronics, 3 and 2 over his opponent, Ralph Emerson, Dept. 15.

GD/E Couples Enjoy Weekend of Golf

Fifteen GD/Electronics - SD couples traveled to Apple Valley over the weekend of Oct. 26-27 for a two-day golf tourney of their own.

R. C. Merrilees led with low net score of 141. Second low net honors went to J. G. Melvin who shot 145 in the two rounds.

J. H. Thompson and D. L. Illeman teamed up for best ball score of 127; D. F. Jackson and H. C. McCray's 130 was runner-up.

Cash awards went to winners. All had chipped in $2 apiece to take care of the prize money.

The Saturday and Sunday matches were played over the fairways of the new Green Tree golf course at Apple Valley.

Another golf weekend is planned for GD/E people in the near future. Any GD/E couple is welcome to join in the fun.

Williamson Scores Double Pistol Win

Commissioner Joe Williamson had a double win at Oct. 27 CRA Pistol Club competition, shooting himself into top spot in both .22-cal. Police Course and .22-cal. Short National events.

His Police Course score was 297; Short National, 287.

Line-up for other Police Course standings were Vern Mardis, second with 291; Ralph Picard (GD/E), third, 276; W. G. Walker (Dept. 6), fourth, 271.

Mardis took another second in Short National event, just three points behind Williamson with 284. Walker was third with 279 and Jim Halfacre (Dept. 140), fourth, 273.

Riding Club Makes Christmas Plans

Plans for CRA Riding Club's annual Christmas party for children of members were finalized at Thursday's (Nov. 7) meeting at Gillespie Field Clubhouse.

The yearly holiday dinner and party is set for Dec. 14, 6 p.m., at the Gillespie Field location. Luke Barbour is general chairman with all the Riding Club lady members assisting.

Commissioner Tommy Thomason and two other CRA horsemen, Fred Kershaw and Vern Logan, joined the Pine Valley Riding Club for a trail ride through the backcountry Nov. 3. In other extracurricular activities, Barbour, Kershaw, and Shorty Westcott traveled to Parwan, Utah, on a hunting trip. Barbour and Kershaw brought home a deer apiece while Westcott spent the time ill in camp.

Garden Club Plans Christmas Party

ARA-CRA Garden Club will hold its largest meeting of the year—its annual Christmas party—at 7:30 p.m., Dec. 4 in ARA Clubhouse east of GD/Astro main plant.

Featured attraction will be a magic show by GD/Astro's Dick Roe, with other entertainment including games and a variety of prizes plus seven turkeys to be given away.

All GD/E, GD/Convair and GD/Astro employees and their families are welcome to attend.

Chargers vs. Houston Tickets Selling Well

Reduced-rate ducats to the Chargers game with the Houston Oilers are going like the proverbial hot cakes at GD/Convair employee services.

Regular $4 seats are on sale at $3 for the Nov. 24 grid battle in Balboa Stadium. They are located on the upper deck, west side.

Football fans must purchase the special discount tickets before Nov. 20.

MOTION PICTURE SECTION RELOCATED

GD/Convair's motion picture section has been relocated within Plant 1 from Bldg. 19. It is now based in the customer service training area, classroom A. Phone extension remains the same, ext. 1674.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1).

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AEROMODELERS—Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

BASEBALL—Convair Industrial League team vs. Hazard Block, Nov. 17, 1 p.m., University Heights.

BASKETBALL—Managers meeting Friday (Nov. 15), 4:45 p.m., Convair cafeteria snack bar, adjacent to Bldg. 19.

BRIDGE CLUB—Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master points night Nov. 27.

CAMERA CLUB—Joint CRA-ARA fourth quarterly contest Nov. 17, 7:30 p.m., Photo Arts Bldg., Balboa Park.

COIN CLUB—Meeting Nov. 21, 7:30 p.m., Convair executive dining room.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

FISHING CLUB—Meeting Tuesday (Nov. 19) at Gillespie Field Clubhouse. Potluck dinner, 6:30 p.m., business session, 7:30 p.m.

GARDEN CLUB—Joint CRA-ARA Christmas party Dec. 4, ARA Clubhouse.

GLIDER CLUB—Meetings every second Saturday, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GUN CLUB—Pendleton trapshoot Nov. 17; Troy-type trapshoot Nov. 29, 7 p.m., all at Gillespie Field Range. Enter big game at employee services before Dec. 1 for annual contest. Drawing to be Dec. 10.

ICE SKATING—Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD—Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES—Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children, 25c.

PISTOL CLUB—Regular shoot Nov. 24, 9:15 p.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB—Meeting tomorrow night (Nov. 14), 8 p.m., Harbor Drive headquarters.

ROAD RUNNERS—Monthly meeting Nov. 21 at Gillespie Field Clubhouse. Judicial board meeting at 7 p.m.; members meeting at 7:30 p.m.

ROCKHOUNDS—Meeting tomorrow night (Nov. 14), 7:30 p.m., Gillespie Field Clubhouse.

SNOW SKI CLUB—Annual Sno Ball Nov. 16, OceanHouse, 9 p.m. Tickets, $1.25 each, at employee services.

SPORTS CAR CLUB—CRA drivers invited to take part in ARA Photorama V Rally, Nov. 24. Enter with E. N. Yeaton, Astro Plant 71, ext. 1504.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 2701, Jack Loos, ext. 2456, both Plant 1.

Electronics Wives Lunch Tomorrow

GD/Electronics wives have today to make reservations for their monthly luncheon tomorrow (Nov. 14) at Foothills Athletic Club in El Cajon.

Mrs. Charles C. Slaght is hostess for this month's affair with social hour at noon; luncheon at 1 o'clock. Price is $2.25, including tax and tip.

Ladies planning to attend should contact Mrs. Slaght at 448-2013, or Mrs. Edmond S. Winlund, 276-3300.



PARADERS—Luke Barbour and Roy Sims, mounted on palominos, represent CRA Riding Club in recent Julian Apple Festival parade.

CRA Sports Car Club Observes Birthday With Dinner-Dance

Tenth anniversary of the CRA Sports Car Club was marked with a double celebration — birthday dinner-dance and installation of new officers Oct. 26 at Gillespie Field Clubhouse.

Commissioner Gerry Wright introduced the new president, Bob Chillo of Dept. 6, who presented other officers for the coming club term: Al Ohler, vice president; Bob Hayward, treasurer; and Mary Lou Stewart, secretary. All are of Dept. 6.

Judicial board members are Charles Backus, Clark Kerr, Vernon Matthews, James Stewart, Fred Thatcher, and Sidney Weiner.

Commissioner Wright, charter member of the group and first president, reviewed the CRA club's history, noting that of the 24 charter members, 11 are still on the club's membership roll. There are currently 52 members.

After dinner, the club's maintenance facility at Gillespie Field was opened for inspection and movies of former club events and rallys were shown.

The evening was concluded with dancing to music furnished through the courtesy of Joe Harris, Ski Club commissioner, and CRA Council past president.

Speaker Clubs Meet Jointly at GD/Astro

GD/Astronautics executive dining room was the scene last month of a gathering of four area Toastmaster/Toastmistress clubs in which General Dynamics personnel figure prominently.

Guests of Serra Mesa Toastmistress Club were members of Dynamics Toastmasters, Delta Toastmistress Club, and Mt. Helix Toastmasters.

Among some 75 persons attending were Toastmistress officials Fran Leland, southwest region supervisor, and Sunny Dark, Council 7 chairman, both employed in GD/Astro's AFPR office.

ARA Golfers Nab Regional Title

Trophy for the General Dynamics inter-division golf tournament contested by teams from GD/Electronics, General Atomic, GD/Pomona and GD/Astro has "found a home" in ARA Clubhouse—at least for six months.

The 24-man Astro team tallied 356 points (on the basis of individual matches and medal competition in four flights) in the recent event held at Carlton Oaks Country Club. The General Atomic team scored 294, GD/Pomona 269, and GD/E 233.

Low gross score was a 74 from Walt Godsin of General Atomic, followed by 78 from PRA's Roman Ramirez. Two GD/E men, G. F. Elmore and Elsworth Henderson, shot 67 and 69 respectively for low net honors in the first flight.

Low gross leaders in second flight were Ernie Stuchly (82) and Phil Raney (85) of ARA, while low nets came from ARA's Norm Ryan (66) and O. G. Ross of PRA (73).

H. B. Cody of GD/E shot low gross 88 in third flight, trailed by Astro's Hal Heist with 91. M. S. McEachern (ARA) had low net 72, seconded by GD/E's W. Flournoy with 77.

Paul Lesher of PRA had low gross in fourth flight with 96, edging Otto Barksdale of GD/E (97), and net honors went to Astro's Ed McCleave and Jack Zinn with 75s.

Next edition of the inter-division event is scheduled next spring.



TOAST LEADERS — Present at joint Toastmaster/Toastmistress meeting sponsored last month by Serra Mesa Toastmistress Club were Ken Jamrus, left, GD/Astro Dept. 652-5, Dynamics Toastmasters president; Barbara Macdonald, GD/E, Delta president; Helen Husseman, GD/Astro Dept. 193-1, president of Serra Mesa Club; and Glen Vail, GD/Astro Dept. 642-2, Mt. Helix president. — Photo by Joe Kayada, Astro Lens.



BRUSSELS MEETING—Recent visit of GD/Astronautics Technical Director K. J. Bossart to his native Belgium included meeting shown here with U. S. Ambassador, Hon. Douglas MacArthur II. Pictured, from left, are Charles W. Tuck, General Dynamics European representative—military programs, Robert G. Hyde, General Dynamics director, military programs—Europe, Bossart, Mrs. Bossart, MacArthur. —United States Information Service Photo.

By Incentive Contract, Astro Earnings Depend On Atlas Performance

In an unprecedented contract agreement signed last month with the Air Force Space Systems Division, General Dynamics/Astronautics staked its fee for Atlas space launch vehicles on flight performance.

Under terms of the unique incentive arrangement, GD/Astro's earnings on the original multi-million-dollar contract for design, development and launch of standardized space launch vehicles (SLV-3) can vary by several million dollars.

Fee bonuses can be earned separately for cost, countdown and flight performance.

"Key to the contract is our willingness to risk the incentive fees on the reliability of our product," said C. S. Ames, vice president and SLV program director. "We are confident we can perform within the cost and reliability ranges agreed to, and in so doing make valuable savings to the government."

The contract's launch performance incentive portion includes two divisions.

The first—countdown—begins with GD/Astro's initiation of the countdown procedure and continues until the vehicle achieves two-inch liftoff from the launch pad.

The second—flight—continues from the time the vehicle is two inches off the pad, until successful conclusion of the Atlas portion of the mission.

Fee bonus or penalty is applied when percentage of success is above or below a target figure, with determination of success, failure, or no-trial (premature completion of countdown or flight due to circumstances beyond GD/Astro's control) to be made by the Air Force.

First Atlas SLV-3 is scheduled for delivery in early 1964.

GD/FW Value Graduates Now Over 1,000 Mark

General Dynamics/Fort Worth last week graduated the 1,000th person from a full-fledged value engineering seminar.

Col. Art Powers, who heads up the Department of Defense's far-flung value engineering efforts, received the 1,000th diploma—a specially engraved one—from President Frank W. Davis.

Colonel Powers, director of productivity and value engineering, office of DOD, lauded the "cost-conscious attitude" of GD/Fort Worth people and called the seminar "very profitable."

A. R. Tocco, national president of the Society of American Value Engineers, wired congratulations to GD/Fort Worth for its "excellent in-house training program."

"I can recall participating in your first seminar a few years back . . . and have watched your progress with interest and admiration," he wrote.

A total of 43 attended the 25th seminar, held Oct. 21 through Nov. 1. This brought the total of graduates of two-week seminars to 1,012.

"Other corporations as a whole may have graduated more employees," said Rand Creasy, deputy value engineering coordinator. "But GD/Fort Worth is the first single division to put this many through a comprehensive program of this sort."

Potential savings of 43 per cent over proposed costs resulted from the 25th seminar, which included four F-111 projects and two B-58 projects applicable to the F-111 effort.

One F-111 project involved replacing proposed ingress ladders with AD4 surplus ladders, which would be cheaper and about 70 pounds lighter. Less expensive electrical connectors, chart holders and adapter engine support were also value-engineered.

A 55 per cent saving would result from using a new rubber-covered, U-shaped part as cover assembly on the B-58 antenna. In addition to cutting cost, the new part would provide more safety for Hustler maintenance men.

President Davis opened and closed the seminar with brief speeches. Col. Max W. Boyer discussed "The Customer's View of Value Engineering." Conference leaders included Bill Nutt, C. W. Doyle, R. D. A. Russell, J. W. Shaffer, J. R. Slack, J. W. Childress and Creasy.

Famme Will Speak At Industry Night

GD/Convair programs will be discussed by President J. H. Famme and two other division executives at "Convair Industry Night" sponsored by the San Diego Section, American Institute of Aeronautics and Astronautics, at a Nov. 22 dinner meeting.

Famme will outline future activities. W. W. Fox, director of engineering, will explain current research and development programs and J. B. Hurt will talk about the Little Joe II launch vehicle program for which he is manager.

The meeting will be held in Del Webb's OceanHouse with social hour at 6 p.m.; dinner at 7; program at 8 p.m. Tickets are $4 and wives are invited.

Engineering Exam Filing Deadline Near

Filing deadline for April 1964 California examinations for professional licenses in electrical or mechanical engineering is Dec. 1, with classes to prepare for the exams opening in January at University of California Extension.

Eligible to take exams are engineers holding valid certification of "in-training" status, or who meet certain combined qualifications of education, experience or age.

Additional information is available from the Board of Registration for Civil and Professional Engineers, 232-4361; University of California Extension, 232-7321; E. A. Hamilton, ext. 1166, or C. G. Erickson, ext. 2511 at GD/Astro main plant; R. K. Walter, ext. 1646, or R. M. Kuhns, ext. 2693 at Plant 1.



MILESTONE — Frank W. Davis, GD/FW president (left) presents certificate to 1,000th person to graduate from full-fledged Value Engineering course at GD/FW — Col. Art Powers.

GD/E Installs New Machine

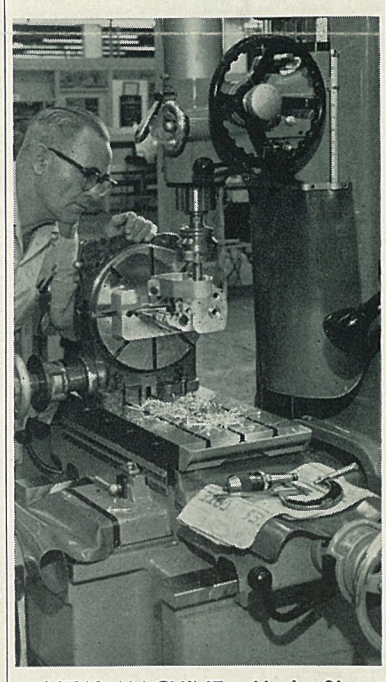
Fabrication capabilities of General Dynamics/Electronics — San Diego have been increased with the installation of a high precision machine in Bldg. 4, Plant 1, machine shop the end of last month.

The Moore No. 3 precision jig bore will be used for precision boring of gear boxes for REINS radar assemblies, said L. F. Kruse, general foreman of GD/E fabrication.

It can do accurate boring at tolerances as close as .00005.

The new equipment was constructed by Moore Special Tool Co., Inc., at Bridgeport, Conn., and has been on order for almost a year. Its approximate cost is $20,000.

The new machine was installed in GD/E's machine shop area of fabrication under supervision of W. J. Squance, assistant foreman.



NEW MACHINE—Herb Simpson operates new precision jig bore installed in GD/Electronics machine shop at Plant 1. Close tolerance machine is used for high precision work on components for electronic assemblies.

Astro Man Completes Navy Space Seminar

R. D. Tuttle (Cdr., USNR), GD/Astro Dept. 316, has just completed active training duty at Treasure Island, attending a space science seminar sponsored by Office of Naval Research.

He is a member of U.S. Naval Research Reserve Unit 11-5, drilling weekly in San Diego. Interested Naval Reserve officers among GD/Astro personnel have been invited to contact Tuttle, Plant 1 ext. 768, for more information.

GD/FW MAN SPEAKS AT CAMPUS BANQUET

C. E. Nevitt of GD/Fort Worth educational services was featured speaker at Delta Sigma Pi's "Founder's Day Banquet" Nov. 2 on the campus at Texas Christian University. He spoke on "Preparation for the Space Age."

Ethics Is Keystone of Business, Davis Tells NMA Convention

The increasing number of managers from specialized professional ranks need ways and means to keep up with their specialty and at the same time develop managerial techniques.

Frank W. Davis, GD/Fort Worth president, issued this challenge to delegates at National Management Association's annual convention in Cincinnati recently.

He was featured speaker at the awards luncheon, at which GD/Fort Worth received a trophy as "No. 1 Company Club" in the nation.

"A prerequisite for achieving supervisory status in engineering or research is superior technical capability which will command the respect of peers and subordinates," Davis said.

"Continued learning is the lifeblood of professional growth. If NMA can help to satisfy this need, and at the same time get across the point that management is another equally fascinating and demanding profession, then these people will respond beyond your wildest dreams," he told delegates.

Davis said the median age level of NMA membership was up (43 vs. 41.5 in 1956), but that the age of the engineering and research group is only 38.2 years.

"So, we see that the character of our job is changing," he said. "But we find among us a growing group of young, highly educated professional specialists who are part and parcel of the new technology.

"The attraction, utilization and direction of this priceless talent is the dominant overt challenge for NMA leadership on both the national and local level.

"The success with which this new talent is alloyed with the older resources of the organization will establish the strength and vitality of NMA in years to come."

Davis deplored a survey finding that "business ethics" was at the bottom of a list of subjects of greatest interest to supervision.

"The only group among us who gave business ethics a ranking as high as fifth in interest was first-level supervision in marketing and sales," Davis said. "Have we become so complacent and self-righteous that we don't even wonder any more?

"It isn't that business men are amoral or that they can't tell right from wrong," he continued. "But right and wrong sometimes become so inexorably intertwined in the complexity of modern business, law, custom, and mores that what seems all right today may, in retrospect, turn out to be all wrong. Study and forethought can be most helpful.

"If, in meeting the challenge of change as it is generated by the technological revolution, we get so busy that we forget that ethics is a keystone without which the arch of business cannot stand, we will have labored in vain.

"Therefore I would like to challenge you to re-establish a lively concern for ethics as a prime . . . subject of interest for whose who aspire to be managers."

Manned Missions to Venus, Mars Seen as Step Toward Jupiter

Missions to Venus or Mars as the first step toward sending men as far as Jupiter and Saturn within this century were outlined by Krafft A. Ehricke, General Dynamics / Astronautics director of advanced studies, recently.

Appearing before an American Institute of Aeronautics and Astronautics meeting in Palo Alto, Ehricke considered alternative missions including two to Venus and a trio of Mars ventures.

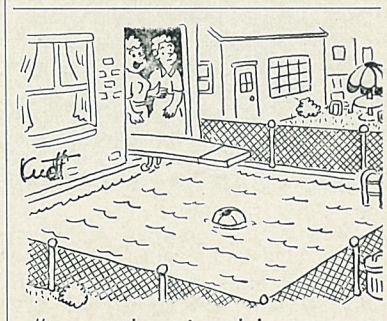
After unmanned instrumented probes into planetary space, Ehricke suggested missions crewed by eight men to precede later flights to other planets from Mercury to Saturn using progressively more advanced spaceships.

Among later missions Ehricke considered was a flight to orbit Venus, then from Venus to Mercury for a three-month stay at a temporary surface base prior to return to earth.

In the middle 1970s, he said, space vehicles appear to be limited to chemical and solid core reactor nuclear engines, and he considered both convoy and single vehicle modes for interplanetary travel.

In his single vehicle proposal, Ehricke suggested that all loads might be carried by two modules linked together. In an emergency these could be separated in flight to improve chances of crew survival.

Ehricke, one of the world's foremost authorities on space flight, joined GD/Astro in 1954.



". . . and we turned in our power mower as a down payment on the pool."

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS NEWS

Vol. 16, No. 24 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, November 27, 1963





990A FOR PERU — Convair 990A joined Aerolineas Peruanas fleet in mid-November when it left GD/Convair plant for Miami training base. Below, Peruvian airline pilots and flight engineers take production flight ground school at San Diego facility. In upper shot are GD/Convair flight personnel who will help with pilot training: W. B. Harwell, in charge of production flight, Harold Siegenfield, W. D. Carrier, Darrell Dunafon, Lanny Rice, Jack Rogers.

Peruvian Airline to Fly Convair Jet Transport

A Convair 990A jet transport will go into service over Aerolineas Peruanas routes this weekend (Dec. 1) after its sale this month to Frederick B. Ayer & Associates, aircraft dealers.

Announcement of the purchase was made on Nov. 15 as the plane left San Diego bound for Mexico City where it was turned over to the Peruvian airline under a lease agreement.

According to Ayer, the lease will be extended over a seven-year period. At the end of this time the airline may exercise its option to buy the plane outright. Terms of the $6,500,000 agreement call for GD/Convair to support the airline with spare parts provisioning and pilot maintenance training programs.

GD/Convair pilots W. D. Carrier and Jack Rogers and flight engineers Darrell Dunafon and Lanny Rice left with the plane to start pilot training at Miami, Fla., training and maintenance base.

W. B. Harwell and Harold Siegenfield planned to join the other flight crews late this month to help with transition of the plane into passenger operations.

Already established at the Miami base are customer service field representatives Mel Clause, John Nowak, and W. F. Ashmore who will conduct maintenance training for the airline's ground crews.

W. Grant Spillman, chief of operations for the airline, headed a group of pilots and flight engineers who went through a three-week accelerated production flight ground school on the 990A before delivery of the plane.

At GD/Convair for the course besides Spillman were Robert C. Forsblade, Hugh Marshall, R. L. Brown, Floyd Wright, John Elliot, pilots; Charles Frias, first officer; B. A. Guzman, Robert B. Meyer, flight engineers.

The Peruvian 990A will go into operation over routes connecting Miami, Mexico City, Buenos Aires from the main base at Lima, Peru.

★ ★ ★

Second Garuda 990A Flies to New 'Home'

Second of Garuda Indonesian Airways' three Convair 990As left the San Diego plant on schedule the morning of Nov. 13, headed for the Southeast Asia island country.

GD/Convair pilot, A. P. Wilson, and Captain Soedarmo of Garuda were at the controls. Flight engineer was GD/Convair's C. J. Falkenthal.

Aboard the Convair jetliner were nearly two dozen Indonesian flight crewmen, maintenance men, specialists, Department of Civil Aviation officials, who had been at GD/Convair for 990A training courses.

The first 990A, which arrived in Djakarta the latter part of September, will go into regular passenger service over Garuda's network which connects Djakarta with Bangkok, Hong Kong. Manila, Tokyo.

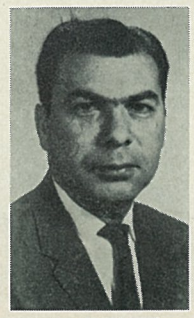
Third 990A is slated for delivery early next year.

GD/Electronics Now Reports To New York

GD/Electronics-San Diego, formerly under the jurisdiction of the Pomona Division, has been established as a division of General Dynamics Corporation, Roger Lewis, president, has announced. John L. Lombardo, who has headed the operation since Sept. 7, 1962, will report directly to Lewis.

Roots of GD/Electronics-San Diego go back to 1950 with establishment of a fifty-man CHARACTRON® tube project group at Convair-San Diego. In 1955 this group became a branch operation of General Dynamics' Stromberg-Carlson division in Rochester, N.Y. In 1961, the Stromberg - Carlson operation was merged with the Convair electronics department, which for several years had designed radar systems and components for the Corporation's aircraft and

(Continued on Page 3)



John Lombardo

Convair Mats Laid as Part Of Marine Field

Landing mats fabricated at General Dynamics/Convair are now being laid at Twentynine Palms Marine Corps Base, Calif., as part of a permanent airfield.

The aluminum core SATS mats produced on the automatic "translator" line at GD/Convair's San Diego plant began moving to the California desert base Nov. 7. The entire lot of 103,000 ft., in four-ft. square panels, was on site at Twentynine Palms by mid-November, C. L. Jackson, SATS systems program manager, reported.

The new concept of landing matting was developed and fabricated under a contract from Naval Air Materiel Center, Philadelphia, Pa.

According to Jackson, coordination with base officials at

(Continued on Page 2)

CUSTOMERS GIVEN COURSE IN VALUE

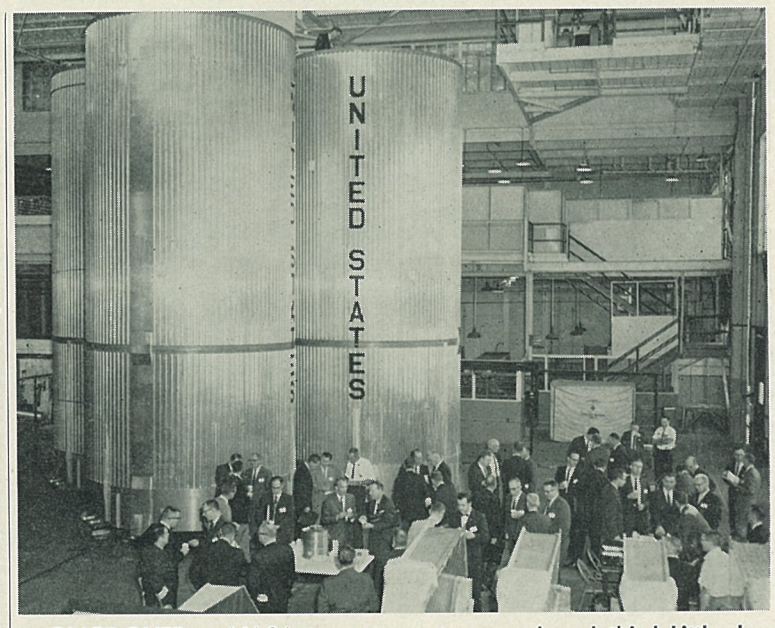
Indonesian crews returning to their homeland from General Dynamics/Convair this month took with them basic facts on value control with the intent of applying the value vs. cost doctrine within their own organization.

Twenty-one Garuda Indonesian Airways flight captains, engineers, maintenance personnel, specialist engineers, and Indonesian Department of Civil Aviation officials attended a special indoctrination arranged just for them before leaving for Djakarta in mid-November. H. P. Williams, GD/Convair value control manager, said that this is the first time that customer personnel have requested such a program.

Material covered in a regular workshop seminar was condensed so that the Garuda and DCA men could at least get a synopsis of a full-length course—with time devoted to each phase of value control training. The session ended with an actual work project.

Williams said that he was impressed by how quickly the four Indonesian teams had been able

(Continued on Page 2)



ONCE-OVER — NASA team accepts second and third Little Joe II launch vehicles during recent inspection at GD/Convair plant. At San Diego for formal acceptance in mid-November were 23 NASA representatives, and interested visitors from North American and Aerojet Corp.

Little Joe II Launch Vehicles Pass Inspection, Colors Flying

Second and third Little Joe II launch vehicles built at General Dynamics/Convair passed inspection with flying colors this month when they were accepted by a National Aeronautics and Space Administration team.

F. J. Bailey headed the design engineering inspection delegation of 23 NASA representatives from Houston's Manned Spacecraft Center, Washington, D. C., White Sands Missile Range, N. M., and Cape Canaveral, Fla. They were at the GD/Convair plant Nov. 14.

Other visitors at the demonstration were from North American Aviation, Inc., and Aerojet General Corp.

J. B. Hurt, GD/Convair program manager for Little Joe II, expressed his satisfaction with the NASA team's favorable acceptance report.

Both vehicles will go to White Sands shortly after the first of the year. The second Little Joe II is tabbed for the first launching of North American's prototype of the command and service module for Apollo spacecraft. The third booster is the backup if a second launch is scheduled.

The fourth vehicle has been completed at GD/Convair and was available for inspection by the NASA group. Visitors also saw a demonstration of the operation of the attitude control system now in functional testing in the Astronautics dynamics laboratory.

The attitude control system will be incorporated in the fifth and sixth Little Joe II vehicles.

First successful flight test of Little Joe II, designed for sub-orbital proofing of spacecraft, was made Aug. 28 over White Sands range in New Mexico.

'Gay 90' Movies Attract Viewers To GD/E Display

A replica of an old-time movie projector, as part of General Dynamics/Electronics-San Diego display at the recent Fall Joint Computer Conference in Las Vegas, Nev., attracted more than its share of attention, report GD/E delegates.

Most of the thousands of scientists and engineers at the conference took a look into GD/E's updated duplicate of an old-fashioned Mutoscope to see an animated pictorial story of GD/E products.

GD/Electronics was one of about 75 companies exhibiting data processing equipment at the 24th national conference under sponsorship of American Federation of Information Processing Societies.

Gen. Bernard A. Schriever,

(Continued on Page 2)



GD/E "FLICKERS"—Visitor at recent Fall Joint Computer Conference held in Las Vegas, Nev., pauses for look into viewer of GD/Electronics' popular old-fashioned projector with specially-made Gay Nineties "movie" of division's products.



GD/E 25-YR. MAN—K. A. Seely (far right), GD/Electronics operations estimating supervisor, receives service emblem marking quarter century with company, and congratulations, from General Manager John L. Lombardo in mid-November. At ceremony were J. H. Thompson, manager of operations, and J. P. Morris, manager production engineering.

Log Book Entries

Service Emblems

CONVAIR

Service emblems due during the period Nov. 16 through Nov. 30.

Twenty-five-year: Dept. 140, F. J. Hammack.

Twenty-year: Dept. 42-5, M. L. Sweeney; Dept. 115, J. B. Hinojos, J. P. LaLanne; Dept. 131, M. G. Cooper; Dept. 171, T. L. Wright.

Fifteen-year: Dept. 6-9, A. A. McFarlane; Dept. 16, Dorothy S. Clark, J. H. Kersey Jr.; Dept. 27-1, J. J. Kelly Jr.; Dept. 48-36, F. M. Peterman.

Ten-year: Dept. 6-2, T. N. Munn Jr., G. P. Nichols, E. E. Reading; Dept. 16-4, A. J. Geisler; Dept. 25, J. W. Fassel, Willie Horn, Columbus Miles; Dept. 93-2, R. G. Macomber.

GD/ELECTRONICS

Ten-year: Dept. 41-30, D. M. Dvorak; Dept. 54-00, M. M. Sallee; Dept. 72-00, E. H. Holsbo; Dept. 81-00, E. E. McClure.

Rider-Driver

CONVAIR

RIDE or **RIDER** from E and Brightwood Road, Chula Vista, to Plant 1, via Hwy. 101, 7:00 a.m. to 3:30 p.m. shift. Fred Ross, Dept. 25. Home phone 420-3700, or plant ext. 411.

Retirements

CONVAIR

ADAMS—Mettie S., Dept. 14-8. Seniority date April 30, 1956, retirement effective Oct. 6.

BRODERICK—Glenn B., Dept. 171. Seniority date Sept. 23, 1947, retirement effective Oct. 31.

COOK—Chester W., Dept. 14-8. Seniority date Sept. 22, 1952, retirement effective Nov. 2.

DUST—William F., Dept. 6. Seniority date Oct. 30, 1940, retirement effective Oct. 30.

EMMONS—Gene B., Dept. 44-5. Seniority date Feb. 29, 1952, retirement effective Sept. 23.

ENGLISH—Wilbur F., Dept. 401-7. Seniority date June 19, 1952, retirement effective Sept. 15.

FERRELL—Huston A., Dept. 115. Seniority date April 12, 1943, retirement effective Nov. 12.

GITTINS—Eric C., Dept. 146. Seniority date Feb. 5, 1953, retirement effective Oct. 5.

GOLDMEYER—Henry G., Dept. 14-1. Seniority date Oct. 27, 1952, retirement effective Oct. 31.

HART—Fredrick M., Dept. 44-3. Seniority date Oct. 24, 1951, retirement effective Sept. 23.

HUSKEY—Samuel M., Dept. 271. Seniority date Sept. 15, 1950, retirement effective Aug. 30.

LOPEZ—Luis G., Dept. 140. Seniority date Jan. 18, 1951, retirement effective Sept. 14.

MEGGISON—Melvern I., Dept. 21-1. Seniority date March 9, 1951, retirement effective Sept. 30.

MORROW—Garner W., Dept. 180. Seniority date June 8, 1950, retirement effective Oct. 23.

PETERSON—Carl, Dept. 148. Seniority date March 13, 1951, retirement effective Sept. 10.

RILEY—Vera S., Dept. 115. Seniority date Oct. 19, 1951, retirement effective Sept. 13.

RODERICK—Julia M., Dept. 14-4. Seniority date April 16, 1956, retirement effective Sept. 14.

SUTTON—Blanche B., Dept. 192-1. Seniority date Dec. 18, 1950, retirement effective Nov. 18.

TALLANT—Henry M., Dept. 160. Seniority date Sept. 20, 1950, retirement effective Sept. 30.

TILTON—Russell G., Dept. 44-3. Seniority date April 5, 1951, retirement effective Sept. 12.

TUCKER—Karl A., Dept. 25-5. Seniority date Dec. 7, 1950, retirement effective Sept. 7.

WATERS—Alfred W., Dept. 133. Seniority date July 26, 1951, retirement effective Aug. 10.

WELCH—Ralph C., Dept. 91-1. Seniority date Feb. 27, 1956, retirement effective Nov. 8.

WESCOTT—Mattie Y., Dept. 401. Seniority date June 3, 1952, retirement effective Sept. 9.

WOOTEN—John D., Dept. 138. Seniority date Nov. 2, 1951, retirement effective Oct. 20.

Awards

CONVAIR

Employee Suggestion awards approved for periods ending Nov. 8 and Nov. 15:

Dept. 48, W. T. Bennett, $20.

Dept. 119, M. D. Smith and R. L. Lanzo (Dept. 128), joint award, $17.85 each.

Dept. 128, V. Breit, two awards, $20.

Dept. 129, B. F. Armas, $10.

Dept. 131, A. V. Elo, two awards, $25.70; H. J. Komos, two awards, $63.70; R. E. Bowman and M. L. Salefski, joint award, $29.85 each.

Cost Improvement Proposals approved for the same periods:

Dept. 41, R. L. Howard.

Dept. 42, C. Lent.

Dept. 91, N. F. Davis.

Dept. 119, L. W. Stamper, two proposals.

Papers Presented

CONVAIR

DONALDSON—J. D. (Dept. 6) with FOKKER, A. J. (Dept. 6). "Cost Effectiveness of the Supersonic Transport," Vehicle Design and Propulsion Meeting, Wright-Patterson AFB, Nov. 4-6.

SMITH—C. R. (Dept. 6). "Tips on Fatigue," Southwest Chapter, Society for Experimental Stress Analysis, San Diego, Calif., Nov. 22.

WOODS—E. R. (Dept. 6). "Role of Automatic Checkout in the Supersonic Transport," Vehicle Design and Propulsion Meeting, Wright-Patterson, AFB, Nov. 4-6.

Convair Mats Laid For Marine Field

(Continued from Page 1)

Twentynine Palms indicated that laying of the GD/Convair matting would start immediately. The General Dynamics mats will form the main impact and landing area.

The impact section will be encompassed by other matting to extend the runway to 6,000 feet in length. Its width is 100 feet.

Jackson points out that any known aircraft, regardless of size and weight, will be able to land on the GD/Convair mat area.

The word on GD/Convair's landing matting has spread to all parts of the world with continued interest shown by foreign governments, including Spain, Portugal, Sweden, Germany. Most recent inspection by an official from another country was made last Saturday (Nov. 23) when the Army of India director of engineering and development was at GD/Convair for a demonstration.

General Dynamics NEWS

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Astronautics Editorial Offices, Bldg. 8, GD/Astronautics, Mail Zone 130-01, P.O. Box 1128, San Diego 12, Calif. Telephone 277-8900, ext. 3322. Staff: Bryan Weickersheimmer, editor; Willard Harwood.

Convair Editorial Offices, Bldg. 32, Plant 1, GD/Convair, Mail Zone 1-320. P.O. Box 1950, San Diego 12, Calif. Telephone 296-6611, ext. 1071. Staff: Grayce Fath, Helen Pemberton.

GD/Electronics (San Diego) news contact: Helen Wood, 298-4641, ext. 1377, Plant 1, Bldg. 51.

Fort Worth Editorial Offices, between Cols. 71-C and 71-D, Assbly. Bldg., GD/Fort Worth, Mail Zone T-63, P.O. Box 748, Fort Worth 1, Texas. Telephone PErshing 2-4811, ext. 2961. Staff: Dave Lewis, editor; Mary Beck.

Pomona Editorial Offices, Room 106-D, Bldg. 1, GD/Pomona, Mail Zone 3-3, P.O. Box 1011, Pomona, Calif. Telephone, NAtional 9-5111, ext. 6226-5279. Staff: Glenn Kehr, editor; Carol Sowers. Daingerfield news office, P.O. Box 947, Daingerfield, Texas. Telephone Lone Star, Texas, 2211, ext. 424.

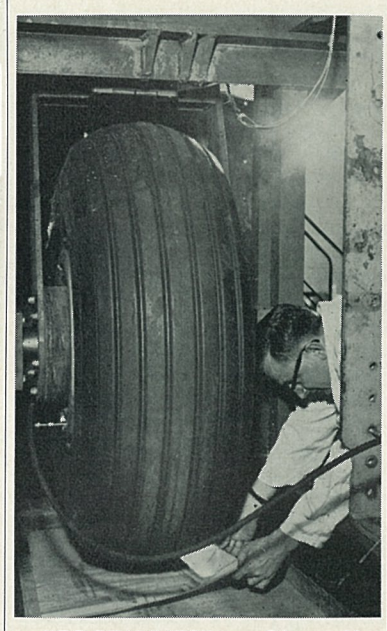
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Affiliated editions of General Dynamics NEWS are published in Rochester, N. Y., covering GD/Electronics and Stromberg-Carlson, editorial offices. 100 Carlson Road, HUbbard 2-2200, ext. 2555. Norman Howden, editor; and at Groton, Conn., covering GD/Electric Boat, editorial offices at Groton, HIlltop 5-4321, ext. 300 and 513, Joseph Tracey, editor.

Aircraft Tire Test May Lead To New Design

Five-foot "runways" are being pulled under aircraft tires in a test program at General Dynamics/Convair structures laboratory which may change future landing gear design.

Test engineers are in the midst of a tire friction study for the Air Force under a $59,000 contract from Ogden Air Materiel Area, Utah. During the seven-month program they will test 14 different types and sizes of military aircraft tires to find how their gripping qualities are affected by different tire and runway conditions.



"FOOTPRINTS" — Glenn Lindeneau, GD/Convair structures lab test engineer, takes tire prints in colored ink to find area of contact during study program for Air Force. Aircraft tire in photo has 48-inch diameter.

Tires are put under loads up to 34,500 pounds at different yaw angles and with various internal pressures to see how the friction varies on surface contact under diverse conditions.

Tests simulate various runway conditions—concrete and asphalt, both wet and dry, snow and ice covered.

First, the locked wheel bearing the tire is loaded, then the surface "pan" in which it sits is pulled by hydraulic jacks. From the time the surface begins to move until it is sliding at one foot per second, measurements of vertical load and lateral forces are taken on oscillographs.

The data curve for settings of various loads and pressures during the program is established by "footprints" of the tire stamped in colored ink on vellums to show how much of the tire's area comes in contact with the surface with different amounts of internal pressure.

Test results will be submitted to the Air Force for final evaluation after completion of the study early next year.



SPREAD VC WORD — Garuda and DCA personnel take morning out at GD/Convair to learn about value control program in specially arranged session. H. P. Williams, GD/Convair value control manager, and J. Thetekdjoe, Garuda customer representative, (in rear of room) watch teams at work on actual project.

Customers Get Special Course In Value Control Principles

(Continued from Page 1)

to absorb the fundamentals of value control in the short four hours.

Their analysis of the project, a porcelain lamp base, was very similar to the producer's end result.

Captain Soedarmo, Garuda vice president of commerce and sales, remarked at the close of the half-day session that such principles as outlined in the value engineering doctrine would be of great value to any organization.

J. Thetekdjoe, Garuda customer representative and manager of engineering for the Indonesian airline, was responsible for arranging the value control session.

He was a member of a full length workshop seminar recently and hopes to encourage value control within his own function when he returns to Djakarta.

Williams pointed out that the concept of value engineering is applicable to any type of business, anywhere, and that through teamwork and creative thinking it can work miracles in elimination of unnecessary costs and improvement of products and services.

Attending were:

Karno Barkah, Slamet, Z. Bahri, Ibrahim, Bachtari Hasan.

Soedarmo, Madiono, Wirjono, Arifin, Moerdianto.

Soedjalmo, Suparto, Dudung, Lie Kim Gan, Soerochmat, Tumenggung.

Sugihardjo, Subowo, Sartono, Sunadi, Suparjadi.

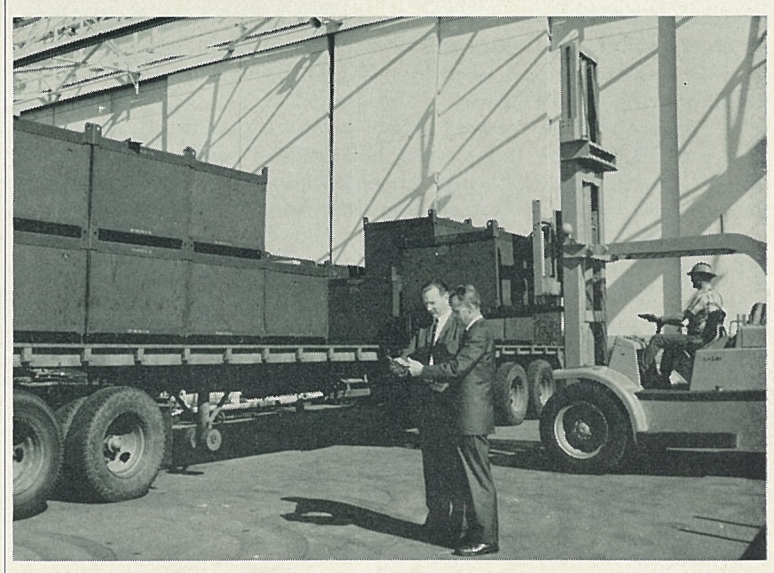
GD/Convair men assisting in the program were Wayne Turner of educational services, W. G. Martin of tool engineering, and C. L. Hibert of value engineering.

GD/E 'Gay 90' Movies Attract Spectators

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Commander, U.S. Air Force Systems Command, made the keynote address.

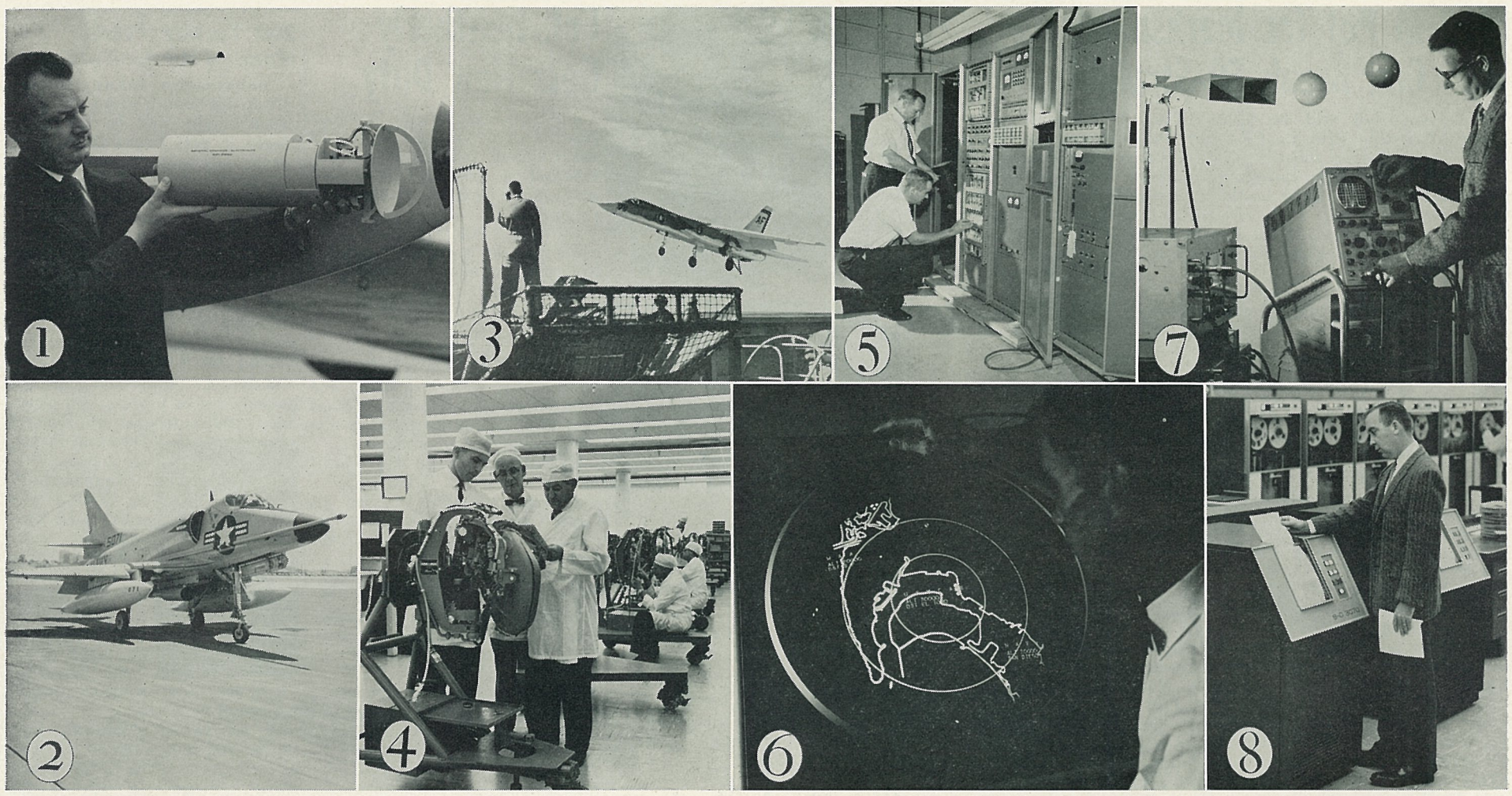
Approximately 20 GD/E persons were at the conference, including General Manager John L. Lombardo; Payne Johnson, manager of communication; and J. W. Colvin, manager of plans and programs.



LOADING DAY — C. L. Jackson, SATS mats program manager at GD/Convair (right), and George Carroll, in charge of matting production, check off pallets in first shipment of GD/Convair landing mats as they move out of San Diego plant to Twentynine Palms Marine Corps Base, Calif., first week of month.



FOLLOW-ON — GD/Convair President J. H. Famme, left, and C. S. Wagner, vice president, Lockheed-Georgia Co., at Marietta, Ga., sign final papers on subcontract for 127 more C-141 empennages to be built at the San Diego-located division.



LEADER IN FIELD—GD/Electronics-San Diego Division is in vanguard of companies developing advanced radar and data processing equipment. Pictured is sampling of wide range of GD/E products now in use: (1) Terrain Following Radar, compact system which can guide aircraft at safe pre-selected altitude over unknown terrain in zero visibility, was (2) installed in jet Skyhawk fighter for recent successful Navy evaluation. (3) Navy A3J attack bombers assigned to aircraft carrier Enterprise check out REINS navigation and bombing system for which (4) GD/E builds radar assembly under subcontract from North American Aviation. (5) S-C 4020 Computer Recorder in use throughout this country and Europe for high-speed recording of computer output on microfilm and paper. (6) New version of CHARACTRON® tube, shown as used in air traffic control situation, projects map of San Diego through window in rear of tube. Electron beams then identify various aircraft flying in area. (7) Highly-accurate Short Pulse Radar developed for military and commercial applications can distinguish between different objects only few inches apart. (8) S-C 3070 high-speed Electronic Printer is capable of printing at rates up to 5,000 words per minute.

GD Executives Speak, Moderate At Joint Technical Conference

Four key General Dynamics Corporation executives took part in a Joint Technical Conference Nov. 7-8 at Disneyland Hotel, Anaheim.

The affair was a joint effort of the American Institute of Aeronautics and Astronautics, American Society of Mechanical Engineers, the Southern California Section of the Society of Automotive Engineers, the National Security Industrial Association and the American Society for Quality Control.

Moderator for a panel discussing "How Can We Improve Technical Teamwork?" was C. F. Horne, president of General Dynamics/Pomona. E. D. Bryant, vice president—operations, GD/Astronautics, spoke on "Industry Views the Modern Logistics Problem." C. W. Frick, vice president—engineering, GD/Convair, discussed "Improving Design Interfaces of Major Weapon Systems." J. Y. McClure, Corporate director of quality control and reliability, served as moderator on a session covering "Developing the Modern Environmental Test Facility."

B-36 Exhibit Spruced For Winter Visitors

For the benefit of winter visitors, GD/Fort Worth Management Club members have spruced up the B-36 Memorial at Greater Southwest International Airport.

A team headed by B. R. Main, GD/FW Dept. 20, cleaned and painted the interior of the huge airplane, and checked all safety features.

Sam Keith, chief of traffic, is permanent chairman of the club's B-36 Memorial committee.

Club volunteers serve as guides during visiting hours to the memorial from 2 to 5 p.m. Saturdays and Sundays.

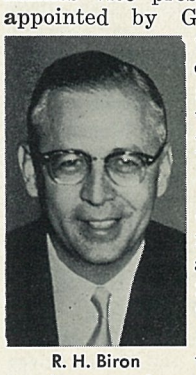
Two Attend Aircraft Meeting on Carrier

Two GD/Convair men were aboard the USS Forrestal for a two-day voyage out of Norfolk, Va., late last month when the aircraft carrier was the site of the semi-annual meeting of the NASA Committee on Aircraft Problems.

Making the trip were B. J. Simons, project manager—transports, who attended as a member of the committee, and Clarence Smith, design specialist, guest speaker on fatigue.

General Dynamics Vp Appointed To Workmen's Comp. Commission

Robert H. Biron, General Dynamics vice president, has been appointed by Governor Brown to a California commission to study the state's workmen's compensation system.



R. H. Biron

Biron is one of seven prominent business and professional men named to the board under Senate Bill 783 with authority to issue subpoenas, administer oaths and hire a staff and consultants.

The study, aimed at recommendations to modernize compensation legislation, will include a "critical analysis" of the permanent disability rating system and its effects on injured workmen and consideration of a rehabilitation system to get maximum medical relief and encourage return to work.

Governor Brown, in announcing the appointments, commented: "Our workmen's compensation program was established a half century ago and has grown to become the finest in the nation. But it is essential that any system and program be studied periodically to find out if it is operating efficiently and meeting current challenges."

Biron, veteran General Dynamics executive, is a native of Minneapolis and holds liberal arts and law degrees from the University of Minnesota. He previously held executive positions with Minneapolis-Honeywell, Northrop Aircraft and Trans World Airlines.

Dynamics Divisions Will Close Tomorrow

General Dynamics people will join the rest of the country in observance of Thanksgiving Day tomorrow (Thursday).

Work at all plants will be suspended except for personnel performing essential maintenance or special production work.

Regular shift hours will be resumed Friday (Nov. 29).

Next holidays will be for Christmas and New Year's.

Electronics/San Diego Separate GD Division

(Continued from Page 1)

ground radar systems. In the latter part of that year this organization was placed under the supervision of GD/Pomona, where it prospered and grew. Today the new division's personnel numbers over 1,200.

Its products include a wide range of advanced equipment in two general categories: radar equipment and data processing systems.

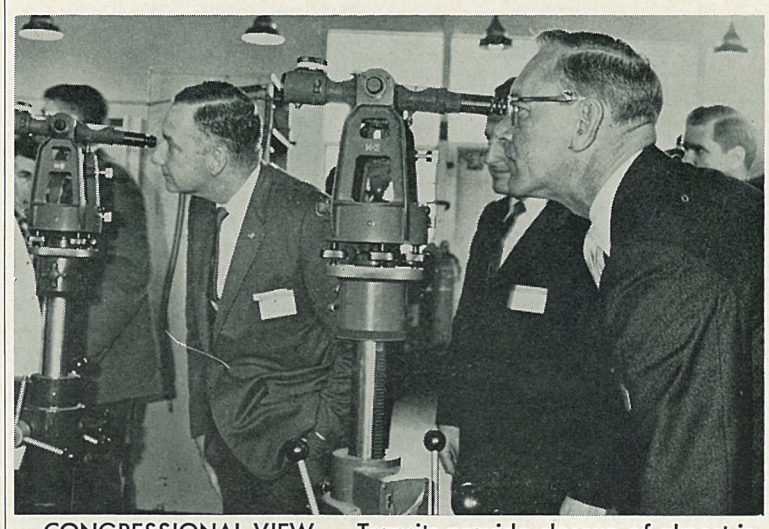
The data processing category—for both industrial and government application — consists primarily of peripheral equipment for computers and communications systems to translate data, and either display the results on a tube face, print them on paper or record them on film for storage and retrieval — or all three at once.

Within this category are such products as the S-C 1090 computer display console, the S-C 3070 high-speed printer, and the S-C 4020 which records the output of large-scale computers on microfilm and on paper in fractions of a second.

One of the division's most successful applications of its information display capabilities was the design, construction and installation of the Project Mercury Control Center.

Among its radar systems are: REINS radar for the A5C (formerly A3J) Naval attack bomber, a terrain following radar system which allows aircraft to fly safely at pre-selected altitudes over any terrain in zero visibility, and the Aircraft Station Keeper (ASK) compact radar system which enables aircraft to fly close formation under low visibility conditions.

This product base is expected to be the building block for the entry of the division into wider areas of electronics.



CONGRESSIONAL VIEW — Transits provide closeup of almost invisible crack under stress tests in Astro's cryogenic test area for Rep. James Weaver, left, and Rep. Joseph E. Karth. Visitors to Astro are members of House Space Science subcommittee.

Two Key Congressmen See GD/Astro Facilities

General Dynamics/Astronautics was host to two key Congressional figures Nov. 11 for a full day.

Rep. Joseph E. Karth (D-Minn.), chairman of the House Space Science subcommittee, and Rep. James D. Weaver (R-Pa.), a committee member, and members of the subcommittee staff were visitors.

"I am impressed with the personnel and facilities here," Rep. Karth reported later.

Of particular interest to the group was the Astronautics work on Centaur. Their official host for the visit was Grant L. Hansen, vice president and program director—Centaur.

"I am convinced that the problems encountered up to now in the Centaur program either have been eliminated or are on the way to being eliminated," Rep. Karth pointed out.

Rep. Karth reported Congress will closely examine all requests for space research funds in the future, although he doubted this trend would be likely to hamper the Centaur program.

Arriving at Astronautics early, the visitors were briefed on Centaur and other Astro space programs, including Atlas space launch vehicle development, manned space station activities, and the research-test program to increase the power of Atlas with new, high-energy propellant.

President J. R. Dempsey took part in the briefings and tours. Other key Astro leaders participating, in addition to Hansen, were Vice Presidents C. S. Ames, and W. H. Patterson.

Xmas Tree Lights Banned for Safety

As GD/Convair departments begin planning Christmas decorations, they are reminded that no electric lights are permitted on Christmas trees.

M. C. Val Dez, senior safety engineer, said that there is too much danger of fires from shortages and improper wiring connections in strings of lights.

The only trees which will be brightened with lights will be the usual official trees which will be set up at different Plant 1 locations a couple of weeks before Christmas. Lights on these trees are approved and installed by electrical maintenance personnel.

$100 in Pot for Marksman Who Can Break 50 Straight

Some hot shot will be $100 richer after this Friday's CRA-ARA Gun Club trap shoot.

That is, he will if he can score 50 straight. There's $100 in the pot now for a winner.

The Troy-type shoot is set for 7 p.m. at Gillespie Field Range Nov. 29.

Other special events scheduled for December are the regular club shoot Dec. 1; Big Game Contest drawing, Dec. 10; and the annual Christmas merchandise shoot, date to be announced later.

★ ★ ★

The W. U. Gattermans of GD/Astro supplied themselves with a variety of Pendleton woolen articles at the CRA-ARA Gun Club's special trap shoot Nov. 17, winning five prizes between them.

Mrs. Gatterman got a Pendleton shirt for topping Class C in Event 1 and capris as high lady in Event 4. Gatterman, commonly known as "Gunner," took home a blanket for best score in Event 2, a sweater for winning Event 3, lounging robe for first in Event 4.

Howard Jacklin took Class A in Event 1 (16-yd.) with a 98. W. Betteridge, with a 95, topped Class B. Edna Gatterman took Class C, also with a 95. All three won Pendleton shirts.

Event 2 (handicap) results were: First, Gatterman, 90, blanket; second, L. P. Johnson, 89, robe and carrying bag; third, Jack Swank, 87, socks.

Event 3 (doubles) was taken by Gatterman with a 89 score.

He also stood first in Event 4, combined 16-yd. and handicap scores, with 187. Johnson won another robe and bag for his second-place score of 181. Mrs. Gatterman was high lady with 180.

In Event 5, based on total scores of 16-yd., handicap, and doubles, Herb Langfeldt had 264 out of a possible 300 to win a sweater.

Santa to Visit Garden Party

Santa Claus has agreed to show up a little early this season to pass out stockings full of candy to children at the annual ARA-CRA Garden Club Christmas party next week.

The holiday affair will be next Wednesday (Dec. 4) at 7:30 p.m. in ARA Clubhouse auditorium, said ARA Commissioner Everett Henderson and Henry Boyd, acting commissioner for GD/Convair group.

A gift exchange will be held with everyone to bring a present, not more than $1 in value, suitable for someone his own sex and age.

Seven turkeys, a variety of merchandise prizes, and plants will be given as door prizes.

Grownups and children will vie for other prizes in a family bingo game. And all will enjoy the featured attraction, a magic show by GD/Astro's Dick Roe. Coffee and cake will be served.

All GD/Astro, GD/Convair, GD/Electronics people are invited but they should bring their gifts for the Christmas exchange.

Winslow and Smith Technical Speakers

E. K. Winslow of GD/Astronautics engineering and C. R. Smith, GD/Convair design specialist, were main speakers at the Nov. 22 meeting of the Southwest Chapter, Society for Experimental Stress Analysis, in San Diego.

Winslow's subject was "Analysis of a Thrust Structure for a Large Pressurized Vehicle Tank, Based on Strain Gage Data."

Smith, structures fatigue specialist, spoke on material used in the handbook "Tips on Fatigue," which he has written under a contract from the Bureau of Naval Weapons.

INCOME TAX COURSE OPEN FOR REGISTRATION

General Dynamics people may take advantage of an income tax course offered through the San Diego Adult Education program. It is available at two locations once a week for nine weeks. Federal and State Income Tax Preparation is taught Wednesdays, 6:30-9:30 p.m., Crawford High School, Room 109; or Thursdays, 6:30-9:30 p.m., Hoover Adult High, Room 206. Cost of course is $4.

'Self-Teaching' Books Accepted

Two "self-teaching" books on mathematics authored by P. H. Selby of GD/Astronautics life sciences section (Dept. 594) have been accepted for publication by McGraw-Hill Publishing Co. of New York City.

The programmed instruction books which will be released in paperback form next spring are the first of a series to be identified as "Auto-Math." The two to be published, "Trigonometry," and "Logarithms," were written first since there seems to be more universal demand for material in those fields of mathematics, Selby explains.

However, the entire programmed instruction series, when complete, will consist of six to eight books, leading students from basic arithmetic through integral calculus.

Each volume is entirely self-contained, said Selby, and is intended for general instruction or review use by industry, military agencies, technical and trade schools, or any individual with a desire to learn mathematics on his own.

Selby holds a degree in mathematics and natural science and has taught mathematics and navigation in the San Diego city schools' evening program. For many years he was supervisor of production flight training at GD/Convair until his recent transfer to GD/Astro. He also is co-author of another book, "American Air Navigator."

Vandenberg Funds Benefit by $27,500

VANDENBERG AFB—GD/Astronautics employees here, through their Employees' Con-Trib-Club, have given more than $100,000 to support local charity and welfare agencies over the past five years.

This fact was brought to light early this month when Don Fagan, director of launch operations—PMR, passed out Con-Trib checks totaling $27,500.

The United Fund of Northern Santa Barbara County received $10,000; $10,000 went to the Santa Barbara County Tuberculosis and Health Society to buy a mobile chest X-ray unit; and $7,500 went to Our Lady of Perpetual Help Hospital, Santa Maria.

Con-Trib-Club has been active in this area for five years.

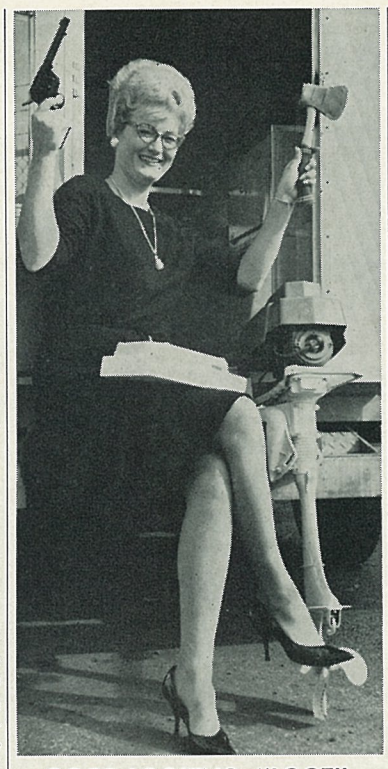
DEC. 16 DEADLINE FOR SD STATE SET

General Dynamics employees in San Diego interested in enrolling for late afternoon and evening courses next spring at San Diego State College were reminded this week of a Dec. 16 admission deadline.

Students desiring to take such courses must be formally admitted to State College and obtain a registration priority, unless they are registered students during the current semester. The Dec. 16 deadline applies to both undergraduate and graduate students.

Formal registration for spring classes will be Saturday, Feb. 8.

Information on registering is available at the admissions office on the campus from 8 a.m. until 4:30 p.m., Monday through Friday. Telephone number is 582-4411, ext. 271.



GOOD-LOOKING "LOOT" — Naomi Adams of GD/Electronics does a little "gun slinging" as she shows off prizes going to lucky hunters at CRA-ARA Gun Club's annual big game drawing Dec. 10. Deadline for entry is first of week.

It's Final Week For Big Game

This is the final week for entering big game kills in the annual Big Game Contest sponsored by the CRA-ARA Gun Club.

CRA Commissioner Jack Swank at GD/Electronics and ARA Commissioner Ezra Johnson at Astro main plant urge all General Dynamics hunters who have brought down big game this season to register them at any employee services outlet at once.

Entries in the contest were nearing 100 last week and more were expected before the deadline date, Dec. 1.

All who enter will have as good a chance as the next fellow to take home one of the valuable prizes at the Dec. 10 drawing.

Top prize is an outboard motor. Second-place award is a tape recorder; and third, a .22-cal. revolver. Many other prizes, all chosen for the sportsman, will be awarded.

On the Dec. 10 program, which decides Big Game Contest winners, will be announcement of another winner—the most improved shooter of the year.

Club members themselves have a chance to cast their votes for the person they think deserves the title. Ballot boxes are placed at the trap and skeet ranges at Gillespie Field and votes may be dropped in until Dec. 8.

Until this year, a committee had selected the winner of the Most Improved Shooter trophy. However, Commissioner Swank said that this time it was decided that the general membership should have a voice in the selection.

In case of a tie a committee will make the final decision.

An excellent movie on big game hunting, which will interest all attending, will wind up the evening's program, said Swank.

Lens Club Members Face Busy Schedule

A busy schedule is in prospect for members of ARA and CRA camera clubs when they gather at 7:30 p.m. Sunday (Dec. 1) at the Photo Arts Bldg., Balboa Park.

On the agenda will be the group's annual election of officers; selection of the slide and print of the year; planning for the annual Christmas party; and a color slide show.

Salvage Yards Set Saturday Schedule

Employee sales at GD/Convair and GD/Astronautics salvage yards will be held on the following Saturday schedule over the next three weeks:

GD/Astro—Nov. 30, Dec. 14.
GD/Convair—Dec. 7.

Col. Heatherly Gets New Duty

Air Force Lt. Col. J. E. "Joe" Heatherly, a veteran figure in the Centaur test program, has reported to General Dynamics/Astronautics for a new duty assignment.

Lt. Col. Heatherly becomes chief of test operations for the National Aeronautics and Space Administration (NASA) resident office at Astro headed by Ronald Rovenger.

For the past three years, almost the inception of Centaur testing, Lt. Col. Heatherly has been on duty at Edwards Rocket Site as NASA's representative on the Centaur test operations.

At Astronautics he will coordinate all tests on Centaur being performed, exclusive of those at Cape Canaveral. His duties include coordinating related Atlas tests.

A 19-year Air Force veteran and former bomber pilot, Heatherly has been involved in various industry-type management positions for the Air Force for the past 12 years.

He and Capt. R. S. Campbell, NASA chief of engineering at Astro, are the lone Air Force men assigned to the local NASA office. Both are on special duty assignments of a permanent nature for NASA.

Security Chapter Briefed at Astro

GD/Astronutics was host to 25 members of the National Security Industrial Association, Los Angeles Chapter, recently for a secret briefing on Atlas and Centaur programs.

Formed by the late James V. Forrestal, this organization aims at a better understanding of the relationship between the Department of Defense and contractors in national defense programs.

President J. R. Dempsey was host. Mort Rosenbaum, vice president for research, development, and engineering; W. H. Patterson, vice president for systems development; and Grant L. Hansen, vice president and program director—Centaur, discussed various aspects of Atlas and Centaur programs.

G. P. Williams Heads Programming Chapter

G. P. Williams, technical publications assistant supervisor at GD/Convair, headed the slate of new officers installed last night (Nov. 26) by the San Diego Chapter of the National Society for Programmed Instruction.

Jac D. Meacham, GD/Convair publications editor and founder of the group, is vice president. He served as first president of the chapter.

Secretary is Brian Dresser of Title Insurance Co. Neil Bodwell, GD/Convair publications editor, is new treasurer.

The local chapter issued first issue of its new quarterly publication, "Framework," this month.

SAWE TO MEET AT SANDS HOTEL

San Diego Chapter, Society of Aeronautical Weight Engineers, will hold a regular meeting at 7 p.m. Dec. 6 at the Sands Hotel. Members and guests are invited. Featured will be a movie, "The Drama of Metal Forming."

SD TABLE TENNIS TOURNEY PLANNED

San Diego Industrial Recreational Council is setting up plans for a table tennis tournament. Ted Wilson, Ryan Aeronautical, is tournament chairman. Those interested in taking part may contact him at 296-6681, ext. 1436.

ASTRO TEEN CLUB TO DANCE DEC. 7

The "Del Fi's" will be on hand at ARA Clubhouse Dec. 7 to play for a Teen Club dance between 7:30 and 11 p.m. One guest per membership card will be allowed with school clothes the official dress. Admission is 25 cents.

200 Turkey Prizes Handed to Golfers

Astronautics Management Club this month came up with what might well be the ultimate in golf tournaments—everybody won!

The Rancho Bernardo event Nov. 17 was billed as a "turkey sweepstakes," and that it was since all 200 participants carried home a turkey!

Robert Sutherland Chief of Placement

Robert E. Sutherland has been named chief of professional placement and personnel at General Dynamics/Astronautics.



R. E. Sutherland

He replaces R. M. Smith who has left the company.

In his new post, Sutherland will be responsible for recruiting and placing engineers, scientists, and other professional personnel at Astro.

A native of Paducah, Ky., Sutherland holds both AB and MA degrees from San Diego State College. He worked for Consolidated Aircraft during the 1943-44 period.

Joining Astro in 1956, Sutherland worked as a personnel engineer, a salary analyst and salary administrator.

GD/Astro's Harbert On Defense Council

Ray C. Harbert, Astronautics director of customer services, has been named a member of the Maintenance Subcommittee of the Defense Industry Advisory Council.

Roswell Gilpatric, Deputy Secretary of Defense, made the appointment. This group includes representatives of Army, Navy, Air Force and industry. Its purpose is to elevate the posture and recognition of the maintenance function and to recommend to the Secretary of Defense specific actions which will improve effectiveness and economy.

Harbert attended a meeting yesterday (Nov. 26) at the Pentagon.

Sanderlin Leader In Pistol Shooting

Only four points from perfect, Ralph Sanderlin copped honors in the Nov. 10 ARA Pistol Club shoot with a 296 out of a possible 300. Roland Schneider was second with a 293.

The expert class went to Bill Givens with a 289 followed by Warren Rancht with a 287. Carl Jensen won the sharpshooter event with a 270, trailed by Byron Clapper with a 247.

The Short National fell to Al Schindler with a 280, followed in order by Sanderlin (272), Ronnie Legg (269) and Bill Geopfarth (267).

Astro-Coached Team Will Play in Bowl

The La Mesa "Scotties," Pop Warner football team coached by a pair of Astro employees, have been invited to their second straight post-season bowl game.

The "Scotties" will play San Dieguito at 5 p.m. Saturday (Nov. 30) as part of the Flower Bowl at Encinitas. Proceeds will go to the Cerebral Palsy fund.

Joe Rogers and Al Servey, both Dept. 836-1, are coaches.

Fife and Drum Corps Will Hold Practice

Plans for practice sessions for a new ARA Fife and Drum Corps to start in January were announced recently by James Churchyard, one of a group interested in starting the activity.

Meanwhile, both men and women desiring to take part are asked to contact Churchyard at ext. 4513.

GD/E Girl Shot Low Net Score In Her First Tournament Try

Clella Beauregard of GD/Electronics led the field of 25 to stroke low score in her first tournament competition at the General Dynamics Women's Golf Club Nov. 9 tourney.

Other winners in the monthly match held at Mission Bay Golf Course included Joan Liggett, also of GD/E, who had second low score and also took the prize for landing her ball closest to the 18th hole pin.

Ora Carpenter of GD/Convair, a new member of the ladies' golf club, and Mary Ransom of GD/E and president of the club, tied for third place.

Next tournament will be Dec. 14. Tee-off times are between 8 and 9 a.m. Players who have already competed in the monthly tournaments will retain their assigned starting times. New players must call Mary Ransom, ext. 2050, or Jo Ann Kranz, ext. 1988, both Plant 1, for starting times.

The December social meeting will not be held because of the holidays.

A new service to help outfit beginning golfers is offered by the group. Members are urged to list all their extra golf equipment with Mary Ransom so new members, just taking up the sport, may purchase items at reasonable cost.

The GD Women's Golf Club now has a membership roll of 28.

Tournament play is held the second Saturday of each month. Instruction is available from Ernie Paul, president of GD/E Men's Golf Club.

Six Golfers Collect Turkeys at Sweeps

Six CRA golfers will have turkey dinner tomorrow due to their links prowess in the Nov. 9-10 tourney at Coronado course.

Al Reiter of Dept. 115, winner of CRA's annual plant championship early this month, held first low gross score of 76 in the 0-14 flight. Bill Matlock's 65 was good for first low net, and a turkey. Matlock is in GD/Convair Dept. 6.

In the 15-21 flight George Kureri of Dept. 115 stroked an 86 for first low gross. C. Shyler of Dept. 48 held first low net score of 66.

Jack Johnson (Dept. 6) had an 89 for first low gross in the 22 and over flight. Eric Torp of Dept. 91 won first low net with 62.

Halfacre in Front In Pistol Match

Jim Halfacre (Dept. 140) supplanted perennial winner, Joe Williamson, as he marked up top score in the Short National event at Nov. 10 CRA Pistol Club matches.

Halfacre's 260 led Williamson's second-place total by nine points. Ralph Picard of GD/Electronics was third with 245, and W. G. Walker (Dept. 6), fourth, 223.

Halfacre and Williamson traded spots in .22-cal. Police Course standings with final line-up reading: Williamson, 291; Halfacre, 284; Picard, 275; Walker, 267.

First Half Finished In Baseball Loop

Convair "buried" Hazard Block in its Nov. 17 game, fifth in first round of Industrial Baseball play. Score was 12-2.

First half ended last Sunday (Nov. 24) with Convair meeting Astro No. 2 at Robb Tournament field.

Second round begins this coming Sunday (Dec. 1). Convair will try to even the score with Oceanside which defeated the nine in first game of the season. The following week (Dec. 8) Convair will play Shrock Construction.

Papers Presented On Super Transport

Two papers dealing with the supersonic transport were presented by General Dynamics/Convair engineers at the Vehicle Design and Propulsion Meeting sponsored jointly by American Institute of Aeronautics and Astronautics and ASD at Wright-Patterson AFB, Dayton, Ohio, early this month.

"The Role of Automatic Checkout in the Supersonic Transport," was the subject of E. R. Woods, design specialist, J. D. Donaldson, technical group engineer, and A. J. Fokker, design specialist, presented "Cost Effectiveness of the Supersonic Transport."

Reserve Tee Times For Golf 'Fun Day'

Starting times are being reserved now for a golfing "fun day" sponsored by the GD/Convair Management Club Jan. 4 over Bonita Valley CC links. Phone Terry Kell, ext. 2225.

Silver dollar prizes will reward spot drives on No. 1, hitting circles on par threes and getting home in two on No. 18. All club members are eligible. Handicaps not necessary.

Teams 'Tip Off' In Slow Break

Six teams will tip off in GD/Convair's slow-break basketball shop league next week as first-half play begins Dec. 3.

Three Convair teams, two from GD/Electronics, and one made up of Astro men based at Plant 1 are entered in the plant tourney.

Games will be played each Tuesday night, except through the holidays, on Balboa Park's Muni Gym court 3. Game times will be 6:50, 7:55, 9 p.m. First round of play will run through Jan. 14 with a single game play-off in case of a tie.

Openers scheduled for next Tuesday are: Hi-Lows vs. Product Service, 6:50 p.m.; Data Processing vs. GD/E Material, 7:55 p.m.; GD/E Chargers vs. 310 Pubs, 9 p.m.

The following week (Dec. 10) schedule will be: Product Services vs. 310 Pubs; Hi-Lows vs. GD/E Material; Data Processing vs. GD/E Chargers.

Radio Club Changes Meeting to Tonight

Radio Club members will meet tonight (Nov. 27) in a change of meeting date for this week only, said CRA Commissioner Jim Lack.

Regular meeting day would have fallen on Thanksgiving Day (tomorrow).

As usual, the session will be at 8 p.m. in Harbor Drive headquarters.

PECAN PARK NOW OPEN SUNDAYS

Pecan Park, CRA's picnic grounds east of El Cajon, is now open Sundays only during the winter months. Hours are from 6 a.m. until 9 p.m. for picnicking groups and families, announced J. K. Field, manager of personnel services.

Joint Holiday Party Planned by Divers

Astro Divers and Delta Divers will join in holiday festivities at a Dec. 14 party in the Point Loma home of Eric Milnor.

Buffet refreshments will be served and dancing enjoyed. The affair will start at 8 p.m. and go on 'til—

Reservations should be made in advance. GD/Convair and GD/Electronics members are asked to call CRA Commissioner Harry Ruscigno, ext. 4201, Astro Plant 71. Astronautics people may contact ARA Commissioner Cliff Kickbush, Astro ext. 3052.

Are you giving your Fair Share through Con-Trib-Club?

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

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AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m.-1 p.m., Clairemont Mesa Flying Site.

ARCHERY—Regular club shoot Dec. 8, Balboa Park Field Range.

BASEBALL—Convair Industrial League team vs. Oceanside at University Heights Dec. 1, 1 p.m.

BASKETBALL — Plant league play starts Dec. 3, Muni Gym, Balboa Park.

BRIDGE CLUB — Play every Wednesday evening, 7:30 p.m., Convair executive dining room, Pacific Hwy. Master points play tonight (Nov. 27).

CAMERA CLUB—Joint CRA-ARA meeting Dec. 1, 7:30 p.m. Photo Arts Bldg., Balboa Park.

DELTA DIVERS—Joint CRA-ARA Christmas party Dec. 14. Call Harry Ruscigno, Astro ext. 4201 for reservations.

FENCING—Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GARDEN CLUB—Joint CRA-ARA Christmas party Dec. 4, 7:30 p.m., ARA Clubhouse.

GLIDER CLUB — Meetings on second Saturdays, 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF—Entries open Nov. 27-Dec. 6 for CRA tourney, Dec. 14-15, Bonita Valley Country Club. Call ext. 1705, Plant 1.

GUN CLUB — Troy-type trap shoot this Friday night (Nov. 29), 7 p.m., Gillespie Field Range. Regular club shoot Dec. 1. Big Game Contest drawing Dec. 10, 7:30 p.m., Gillespie Field Clubhouse. Register kills at employee services this week to be eligible.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75c; children, 25c.

PISTOL CLUB—Regular shoot Dec. 8, 9:15 a.m., San Diego Police Pistol Range, Federal Blvd. and Home Ave.

RADIO CLUB — Meeting changed to tonight (Nov. 27), 8 p.m., Harbor Drive headquarters.

RIDING CLUB—Annual Christmas Party Dec. 14, 6 p.m., Gillespie Field Clubhouse.

ROAD RUNNERS — Weekend outing to Painted Gorge Dec. 13-15. Christmas party Dec. 20.

ROCKHOUNDS — Christmas party Dec. 12, 7:30 p.m., Gillespie Field Clubhouse.

SPORTS CAR CLUB—Meeting Dec. 4, 7:30 p.m., Convair cafeteria, Pacific Hwy.

STAMP CLUB—Meeting Dec. 5, 7:30 p.m., Convair executive dining room.

WATER SKI CLUB—Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 2701; Jack Loos, ext. 2456, both Plant 1.

Delta Divers Travel To Baja California

Five members of CRA's skin diving group, Delta Divers, traveled down the coast of Baja California to Sal Cepuedes Nov. 16 in search of lobsters.

They caught enough for a good feed on the beach, said CRA Commissioner Harry Ruscigno.

Delta Divers are making weekly excursions off Point Loma, usually on Saturdays, during the lobster season. They are using the club's 16-ft. skiff which has just been overhauled after a year's constant use. Members did the work themselves.

Sports & Recreation

CRA Sports Car Club's Garage Offers Wide Equipment Variety

CRA Sports Car Club's garage facility—one of the most ambitious projects of any CRA activity—passed its first sixth-month anniversary this month without a birthday cake but with a rousing cheer of appreciation from all club members.

Fred Thatcher, who keeps on the move as weekend "shop superintendent," said that 136 separate servicing functions have been performed by the club members on their own cars since the garage opened in May.

Months of labor had gone into remodeling the 25x50-ft. structure which had been used for building small boats. It was turned over to the Sports Car Club by Convair Recreation Association.

The garage opened with tools and equipment acquired over the years from the club's own treasury and CRA budget allotment. Other items came from Convair surplus.

Other equipment has been added in the last six months, including a second chassis lube gun to break the bottleneck that existed with only one. A lube hoist, valve refacing machine, barrel rack, A frame and hoist, parts-cleaning gun, garage floor creeper, hand lube gun, universal joint for lube gun, and tire gauge have been acquired in recent months.

Future plans call for a drop ceiling to lower temperatures within the building caused by radiation from the sheet metal roof. Thatcher said this project should have priority because engines can not be properly tuned in elevated temperatures.

An automotive paint shop probably will be built during the next year with labor donated by members.

The garage is open every Saturday from 8 a.m. to 5 p.m., but reservations should be made in advance. Thatcher warns that it is unwise to arrive at the facility expecting to use certain equipment without calling first. His plant extension is 639, Plant 1; home phone, 295-1179.

Club members and their immediate families may use the facility, equipment, and supplies without any charge except for replacement of materials on a cost basis.

Painted Gorge Runners' Goal

CRA Road Runners will wheel their trailers eastward to the desert for their Dec. 13-15 outing.

Painted Gorge, near Ocotillo on Hwy. 80, has been chosen for site of the weekend trip with Carl Monds in charge as wagonmaster. Ed Wawrzynski is assistant.

Directions and maps will be mailed to club members. However, everyone is reminded to bring along water and wood for the dry camp.

Twelve units with 46 members and guests gathered at Live Oak County Park for the November jaunt. White elephant prizes went to winners in the bingo game Saturday afternoon and a community sing was held around the campfire after the potluck dinner that night.

Loretta Devin, vice president, led devotionals before the travelers headed homeward Sunday.

The annual Christmas program and party on Dec. 20 will take the place of the month's regular meeting. The holiday party will be held in Gillespie Field Clubhouse.

GD/E Wives, Guests Plan Xmas Lunch

GD/Electronics wives and their guests will hold their annual Christmas luncheon on Thursday, Dec. 12, at the University Club, 1333 Seventh Ave.

Gifts, not more than $1.50 in value, will be exchanged. Social hour will be at noon with luncheon at 1 p.m. Door prize will be a $5 gift certificate awarded by CRA. Mrs. J. W. Swank was last month's winner.

Reservations must be made before Dec. 9 through the hostesses: Mrs. James P. Syren, phone 453-3604; Mrs. George Oatman, phone 277-6474.

★ ★ ★

Porsche First 'Prima Donna'

First car to be spotlighted in CRA Sports Car Club's "Prima Donna" nights was the Porsche which held the stage at the Nov. 6 meeting.

The new series of programs will highlight particular makes of sports cars by presenting movies and speakers describing the history, features, and competition record.

A movie of the Porsche factory showed construction techniques and illustrated the high standards of quality. Club members B. J. Simons of GD/Convair and Gerry Coffey of GD/Astro discussed technical details and advantageous features.

Four cars were on display to show the various body styles and engine modifications.

The meeting drew a record attendance with over 60 members and guests present.

The program on the Porsche will continue at the Dec. 4 meeting with a movie, "The Porsche Team-Racing Season 1960," and more speakers.

All General Dynamics people interested in sports cars are invited to attend the regular club meetings, held the first Wednesday of each month at 7:30 p.m. in the main Convair cafeteria, Pacific Hwy.

'Pack In' Tips Given to Clubs

CRA Rockhounds opened their Nov. 14 meeting to other clubs interested in learning the finer points of packing in to mountain areas.

Wendell Stewart of Stewart's Pen Shop, explained how to prepare a pack for hiking trips of different lengths. He demonstrated with an actual pack containing all necessities—dehydrated food, clothing, sleeping equipment, shelter.

Stewart is a member of the Sierra Club and expert on trail hiking.

Members of the Tourmaline Society, El Cajon Gem and Mineral Club, and CRA Fishing Club were present.

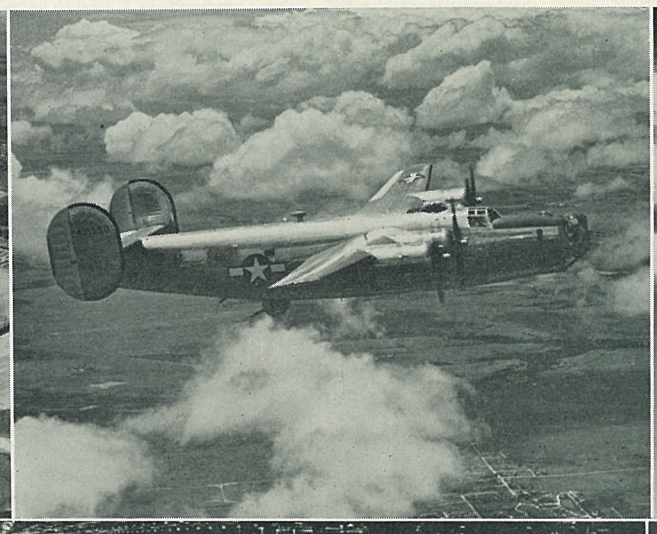
Rockhounds have scheduled their annual Christmas party for Thursday, Dec. 12, at Gillespie Field Clubhouse.

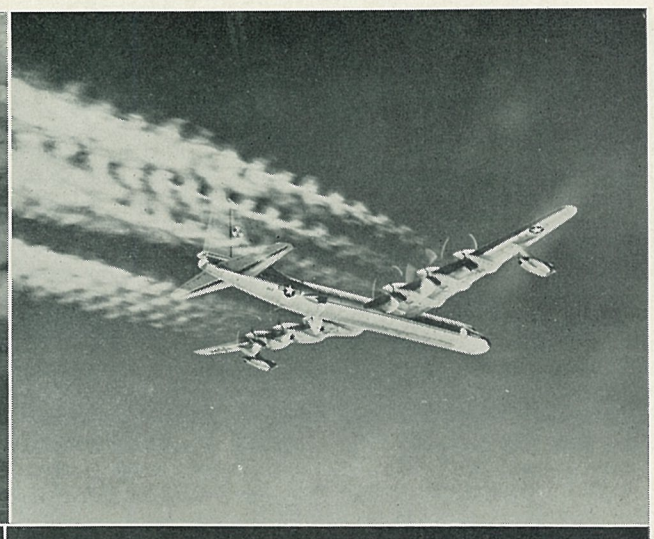
Registration Open For Golf Tourney

Registration opens today (Nov. 27) for next month's CRA golf tournament.

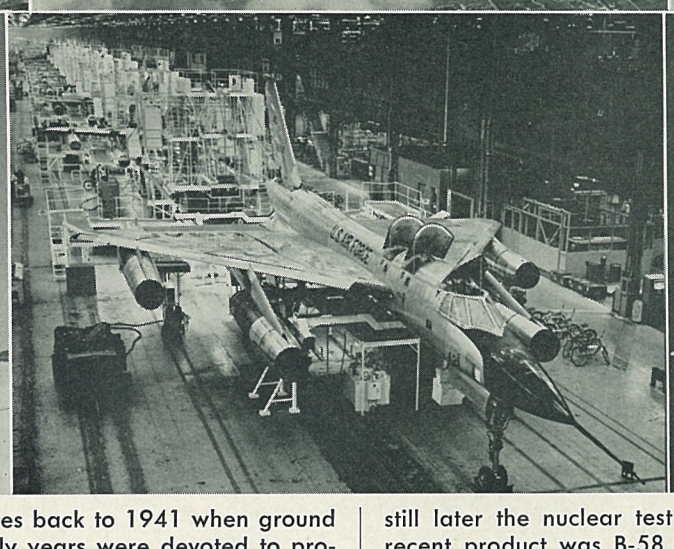
GD/Convair and GD/Electronics golfers have until Dec. 6 to sign for the Dec. 14-15 tourney at Bonita Valley Country Club. For starting times call ext. 1705, Plant 1.

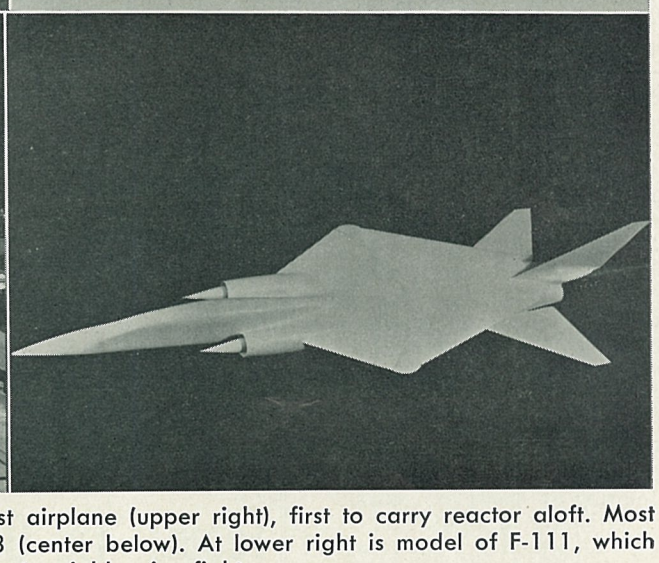












HIGHLIGHTS — General Dynamics/Fort Worth dates back to 1941 when ground was broken for enormous plant (upper left) and early years were devoted to producing wartime B-24s (center above). Then came B-36 Peacemaker (lower left) and still later the nuclear test airplane (upper right), first to carry reactor aloft. Most recent product was B-58 (center below). At lower right is model of F-111, which will be nation's first combat variable-wing fighter.

Versatile Fort Worth Division Makes Transition to Aerospace

(Following is the first in a series of general features covering different General Dynamics divisions to remind employees of how wide is the "wide, wide world of General Dynamics.")

Appropriately, perhaps, the builder of the nation's biggest and fastest bombers—and what looms as its most versatile fighter plane — is located deep in the heart of Texas.



Frank Davis, GD/FW president

Fort Worth Division of General Dynamics sprang up nearly 23 years ago on the scenic shores of Lake Worth. It has evolved from a "bomber plant" into a modern aerospace firm. Its capability spectrum: supersonic aircraft, space technology, nucleonics.

Its latest product, the Mach 2 B-58 Hustler, is Strategic Air Command's swiftest nuclear deterrent punch.

B-58 production halted as the 116th Hustler rolled off assembly lines last year. But with unprecedented urgency, GD/FW people began designing and building the nation's first combat variable-wing fighter plane for Air Force and Navy, the F-111. This contract is potentially the largest ever awarded for a fighter plane.

The F-111 will have Mach 2-plus speed and intercontinental range. Its variable wing can be extended for short takeoffs and landings (from austere fields), then tucked back for supersonic flight at very high altitudes or on the deck. This is the plane, some experts say, which will revolutionize the industry.

Though such splendid supersonic stalwarts as the B-58 and F-111 have pushed GD/FW to the forefront of the industry, it was the old piston-engine performers —the B-24s and B-36s—which earned the division's niche.

On April 17, 1942, about a year after ground was broken for the plant, the first GD/FW-assembled B-24 Liberator roared aloft. During World War II, a total of 2,743 Liberators and over 250 transport versions, the C-87, rolled off busy GD/FW assembly lines. Peak activity was in January, 1944: 200 airplanes.

GD/FW also built and ushered quickly into service the B-32, which saw limited service in the Pacific near war's end.

If B-24s and B-32s helped win the war, GD/FW's next major assignment — the B-36 Peacemaker — preserved the shaky peace that followed.

The giant 435-mph B-36 could carry a bomb load of 84,000 pounds and roam for 10,000 miles. A reconnaissance version remained aloft without refueling for over 51 hours, still a record.

Peacemakers reigned as America's prime deterrent for a decade, yielding finally to the faster jets. But begrudgingly; GD/FW built a jet version of the B-36 — the YB-60 — which made a number of successful flights.

While sticking mainly to its specialty as an aircraft manufacturer, GD/FW, with a modicum of fanfare, has intensified its space-age efforts.

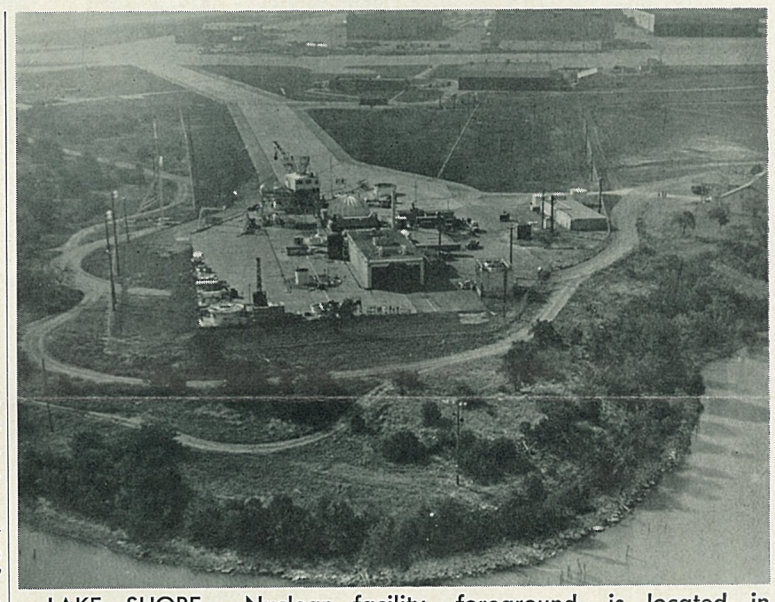
It builds the Centaur and Surveyor nose cones and the big booster section for the Atlas missile. And the company's unique experience in honeycomb structure (a B-58 breakthrough) is now being used in building an instrumentation section for the Saturn project. GD/FW is handling this and a number of other "critical" tasks for NASA's Marshall Space Flight Center in Huntsville, Ala.

GD/FW's Nuclear Aerospace Research Facility (NARF) is, in the Air Force's own language, "the only facility of its kind." Originally a $2 million center, NARF was set up to accommodate GD/FW's shielding experimentation work on a nuclear airplane. Since then, NARF has expanded into a $10 million facility, and it works for many agencies in many areas: shielding, instrumentation, radiation effects, safety, and others.

GD/FW thus became the first—and probably only—company to get "nuclear airplane experience" by actually flying a reactor for a number of hours. The nuclear airplane concept, though scuttled, is still considered by many the answer to a recurring need: an airborne launch vehicle capable of loitering near target for very long periods.

Many other relatively small contracts, both hardware and study, are giving GD/FW engineers and scientists know-how in space technology.

The diverse activity at GD/FW confirms its aim as set down in the "official" language of the sales department: "conceptual schemes into atmospheric and space vehicle systems which will meet the mission requirements of the future."



LAKE SHORE — Nuclear facility, foreground, is located in fenced-in area at north end of GD/FW reservation, near Lake Worth.

Nuclear Research Important Part of GD/Fort Worth Task

Nuclear power already drives power plants and runs submarines, and soon it will propel missiles through outer space.

How will radiation from its reactors affect the space ship and its systems? And more importantly, the humans who guide it?

These and many other knotty nuclear problems in space are being investigated at GD/Fort Worth's Nuclear Aerospace Research Facility (NARF).

Veteran nuclear scientists are working on a number of projects including:

Pocket-sized dosimeters which crews of Apollo and Gemini space craft can use to take radiation measurements in flight.

A study to show how much radiation an unshielded lunar space ship would receive; another to show how radiation will work on the sensitive electrical systems of a missile; and still another to determine what effect a nuclear-weapons burst in space would have on human space travelers.

A substantial amount of NARF's activity is directed toward space, though certainly not all. For example, nuclear engineers have worked on a system of aerial radiological monitoring for the Office of Civil Defense.

Other projects have included fabrication of miniaturized, highly reliable nuclear instrumentation for space vehicles.

NARF was founded in 1951 to support GD/FW's efforts in nuclear-airplane research. In recent years, under direction of Dr. H. R. Dvorak, it has assumed functions in radiation shielding, radiation effects, nuclear instrumentation, and nuclear safety.

Its facilities have increased from $2 to $10 million in value, and include: a 3-megawatt Ground Test Reactor; 10-megawatt Aerospace Systems Reactor; neutron generator and Cobalt 60 gamma irradiation unit.

These Are GD/FW History Highlights

April 18, 1941: Ground broken.

April 17, 1942: First Fort Worth-assembled B-24 flown.

Aug. 9, 1944: War Department announces plans to build B-32.

Aug. 8, 1946: XB-36 makes maiden flight.

Aug. 28, 1947: First test-flight of production B-36.

March 26, 1949: First test-flight of B-36 with four jet engines in addition to six pusher-type piston engines.

Sept. 5, 1951: AF announces plans to develop atomic-powered airplane.

April 18, 1952: YB-60, eight-jet, swept-wing bomber makes maiden flight.

Oct. 12, 1954: AF orders undisclosed number of B-58s.

Sept. 17, 1955: NB-36 flies with operating atomic reactor aboard.

Nov. 11, 1956: B-58 Hustler makes first flight.

June 29, 1957: First Mach 2 (twice speed of sound) flight.

Sept. 18, 1959: B-58 makes low-level flight from FW to California under 500 feet at over 700 mph.

Dec. 1, 1959: B-58 No. 31 becomes first operational Hustler to join SAC.

Sept. 13-15, 1960: 43rd Bomb Wing crews score best pair of radar bomb scores and top individual high-level navigation run in first year in SAC Combat Competition.

Jan. 12, 1961: B-58 crews from Carswell AFB shatter world speed record for 2,000 kilometers (averaging 1,061.80 mph).

Jan. 14, 1961: B-58 crews from Carswell AFB smash 1,000 - kilometer speed record (averaging 1,284.73 mph).

May 10, 1961: B-58 crew from Carswell averages 1,302 mph around 669.4-mile closed-circuit course at Edwards AFB to set sustained speed record and win Bleriot Trophy.

May 12, 1961: Bunker Hill AFB receives first B-58 (Hoosier Hustler).

May 26, 1961: B-58 crew from Carswell AFB sets record for New York-to-Paris flight——3 hours, 19 minutes.

March 5, 1962: B-58 crew from Carswell AFB slashes three world speed records flying from Los Angeles to New York and returning in 4 hours, 42 minutes, averaging 1,045 mph.

Sept. 14, 1962: Carswell AFB crew pilots B-58 to height of 85,360.8 feet with payload of 5,000 kilograms (11,023 lbs.) over Edwards AFB to break the world's altitude - with - payload record, formerly held by USSR.

Nov. 24, 1962: GD/FW and Grumman Aircraft Engineering Corp. awarded contract to build F-111.

Oct. 16, 1963: Bunker Hill AFB crew pilots B-58 from Tokyo to London in 8 hours, 35 minutes setting 15th record.

Christmas Message from Roger Lewis Strikes a Solemn Note

This year we will mark the feast of Christmas only a few days after the conclusion of the national period of mourning for President John F. Kennedy; the memory of the loss will temper the spirit of celebration.

It is fitting at this time that we honor the late president by rededicating ourselves to the cause which he considered the primary work of our time—Peace on Earth.

The men and women of General Dynamics have made a major contribution over the years in helping to keep this country strong so that it might preserve peace.

We can at once honor the memory of President Kennedy, and assist President Johnson in his awesome responsibilities by responding to his call for renewed efforts to keep America strong without sapping our economic resources.

In this way, the true spirit of Christmas may one day live in the hearts of men everywhere.

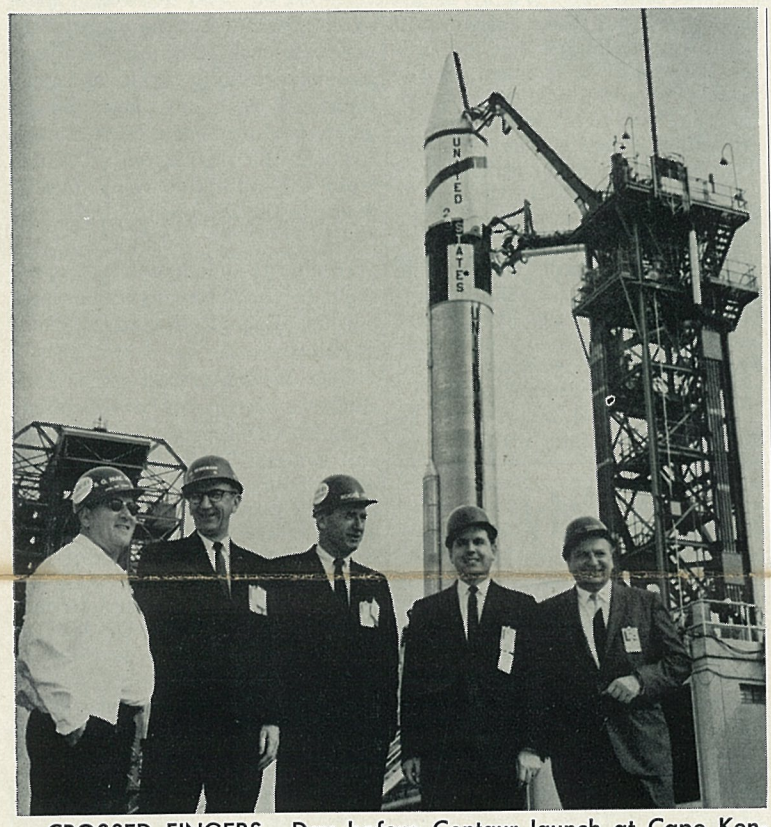
Roger Lewis
President

GD

SAN DIEGO EDITION
(Serving GD/CONVAIR
and GD/ELECTRONICS)

GENERAL DYNAMICS
NEWS

Vol. 16, No. 25 PUBLISHED BY GENERAL DYNAMICS CORPORATION 52 Wednesday, December 11, 1963



CROSSED FINGERS—Day before Centaur launch at Cape Kennedy Roger Lewis, General Dynamics president, and E. H. Heinemann, vice president-program development, visited pad to "talk with troops." From left, B. G. MacNabb, Astro test operations director, Heinemann, Lewis, Grant L. Hansen, vice president and program director-Centaur, K. A. Ehricke, Astro director of advanced studies.

Atlas, Centaur Combine For Excellent Launch

Centaur 2-B, launched late last month from Cape Kennedy as the "business end" of an Atlas-Centaur Two (AC-2) combination, now whirls around the earth in orbital flight that may continue for 200 years.

It travels in an egg-shaped orbit, reaching a speed of 15,150 mph at its high point (apogee) some 1,050 miles in space and a speed of 17,550 mph at its low point (perigee) some 340 miles above earth.

Each orbit requires 108 minutes.

Centaur is visible on earth on occasion as a flashing object (it tumbles end over end) under ideal weather conditions (best sighting times: dawn and dusk).

Although its "active life" was just over 10 minutes—time required for launch, separation, start and burn of Centaur engines and subsequent orbital injection—Centaur took a giant and long-awaited step in the goal to send manned spacecraft to the moon.

Operational Atlas-Centaur vehicles are slated to send Surveyor spacecraft on their journey to soft-land on the moon, a program that will unlock many secrets of space before manned lunar excursions are dispatched. Later, there will be Mariner B probes of near planets.

Equally far-reaching is Centaur's role in developing technology in the field of high-energy space vehicles. Centaur is the first of these vehicles employing fuel of hydrogen and liquid oxygen. This combination, called the ideal rocket fuel, produces as much as 40 per cent more thrust

(Continued on Page 3)

Convair Club's Xmas Dance At El Cortez

This Saturday (Dec. 14) is the date for GD/Convair Management Club members and their guests to observe the holiday season with their annual Christmas dance.

Members have only a couple of more days to get their tickets at regular plant outlets for the holiday affair. It is hosted by the club's board of control in the Caribbean Room of El Cortez Hotel.

Dancing will be to the popular seven-piece Francis Leonard Orchestra from 9 p.m. to 1 a.m.

M. C. Val Dez will be master of ceremonies and guests will be welcomed by President Ralph Montgomery. E. R. Fink is chairman in charge of arrangements.

Price of the dance is $3 per couple, with a dollar of the charge going toward door prizes which will be given during the evening.

Use Common Sense In Xmas Decorating

"Let's make it a safe Christmas, as well as a merry one, by observing common sense safety rules in the plant and at home as well," reminded M. C. Val Dez, GD/Convair senior safety engineer.

No electric lights are allowed on departmental Christmas trees, thus eliminating risk of fires from improper wiring connections.

At home, trees should be set in water or wet sand and fire-safe decorations used for safety's sake.

GD/Electronics Ups Membership In Con-Trib to 91%, Convair 89%

Membership in both GD/Convair and GD/Electronics Employees' Con-Trib-Clubs was substantially boosted as a result of the annual drives held the latter part of November.

As the week's campaign came to a close, final reports showed GD/Electronics participation jumping to 91 per cent of the San Diego division's population. GD/Convair raised its participation to 89%.

Jack Swank, GD/E manager of industrial relations, and J. K. Field, GD/Convair manager of personnel services, chairmen of the two GD drives, expressed themselves as gratified with the response.

GD/Convair's former participation was 83.5 per cent, and GD/Electronics' stood at 76 per cent before the current campaign, which was the first formal drive conducted separately for the GD/E division.

GD/Convair Con-Trib committee members boosted the Con-Trib pledge to United Community Services by $10,000 to $50,000. GD/Electronics has pledged $18,000 to UCS.

GD/Electronics gained 160 new members for its Con-Trib organization, bringing its membership to 1,050 at both Plants 1 and 2.

Six GD/E departments hold perfect membership records. One-hundred percenters are material, plans and programs, and industrial relations at Plant 1; plant engineering, operations, production control at Plant 2.

George Oatman coordinated the GD/E drive, while Ken Wulfemeyer was in charge of the GD/Convair campaign.

GD/E Will Dance At Xmas Party

General Dynamics/Electronics people at San Diego are looking forward to their biggest social event of the year—the annual all-division Christmas party.

Main ballroom of Hotel del Coronado has been selected as setting for this year's dinner-dance Dec. 23.

Dinner will be served at 7:30 p.m., with dancing from 9 p.m. to 1 a.m. Bart Hazlett's Band will play. A raffle will be held and door prizes given.

Tickets, at $2.75 a person, now are available within departments at Plants 1 and 2. Employees will be contacted by their departmental representatives. The event is open only to GD/E people and their escorts. No guest tickets will be sold.

This year's affair is sponsored jointly by the division and the GD/E Management Club. George Oatman is chairman of the arrangements committee. Other members are James Wheeler, Peggy Tracy, Shirley Palmore, Ernie Paul.

GD/Convair and GD/E 'Dress' For Christmas

Christmas tree lights are twinkling at GD/Convair and GD/Electronics plants to herald the approach of the Yuletide season.

Plant engineering placed three trees in prominent spots at Plant 1 this week.

One is over the entrance to Bldg. 1 lobby; the second, over the Bldg. 16 entrance; and the third decorates the entrance to GD/Electronics lobby, Bldg. 51.

Entire Flight of Little Joe II Duplicated in Control Checkout

An entire flight of a Little Joe II launch vehicle, from the time it blasts off the launching pad until it fulfills its mission in outer space, is being duplicated at GD/Convair in checkouts of the booster's new control system.

The flight simulation tests will prove out design of the attitude control system to be incorporated in the fifth and sixth vehicles. Initial Little Joe II vehicles built at GD/Convair for test launching of NASA's Apollo spacecraft have fixed fins solely for stabilization of the launch vehicle.

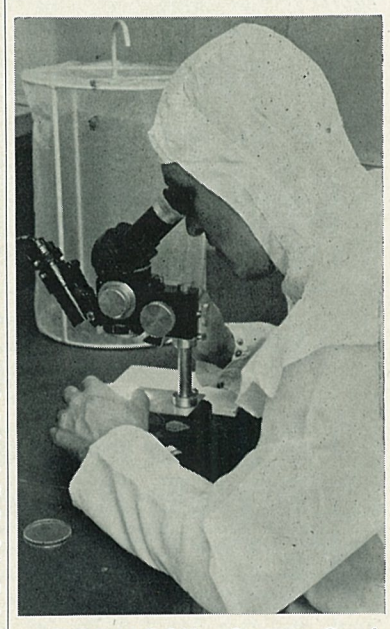
During its "flight" on the ground the Little Joe II control system will guide a vehicle from launch to 200,000-ft. altitude over a hazardous path buffeted by severe gusts and winds.

The three integrated parts of the system—autopliot, fin, and reaction control subsystem—will be observed during actual operation.

A complete flight plan, including as many adverse conditions as necessary, is fed to the autopilot "brain" of the system by GD/Convair's analog computer. Closed circuit televisions in the computer center monitor the three separate sections of the system, which are tied in just as if they were actually installed on a Little Joe II even though they are physically widely separated during tests. (The autopilot is located in the computer center. The fin is in the main area of the Astronautics dynamics test lab building at Plant 1, while the reaction control system is isolated in one of the reinforced test cells.) The simulated vehicle in the computer center "feels" effects of the outlying control subsystems by means of electrical response signals fed back to it by these controls.

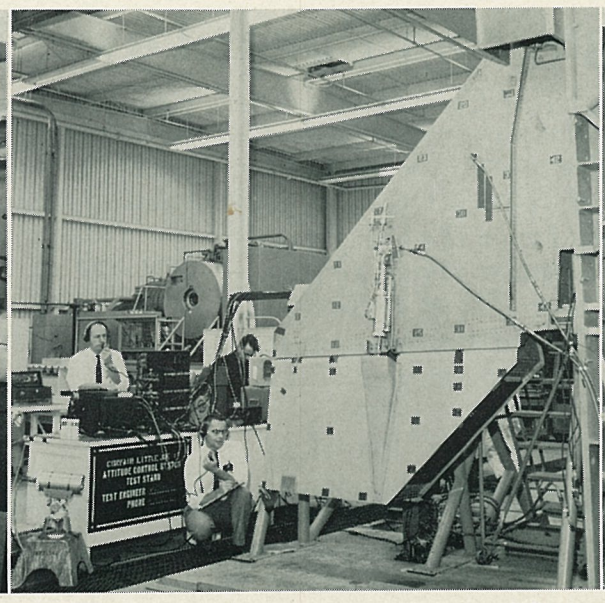
The attitude control system has been developed at GD/Convair for use throughout the entire flight of Little Joe II. The reaction control subsystem, develop-

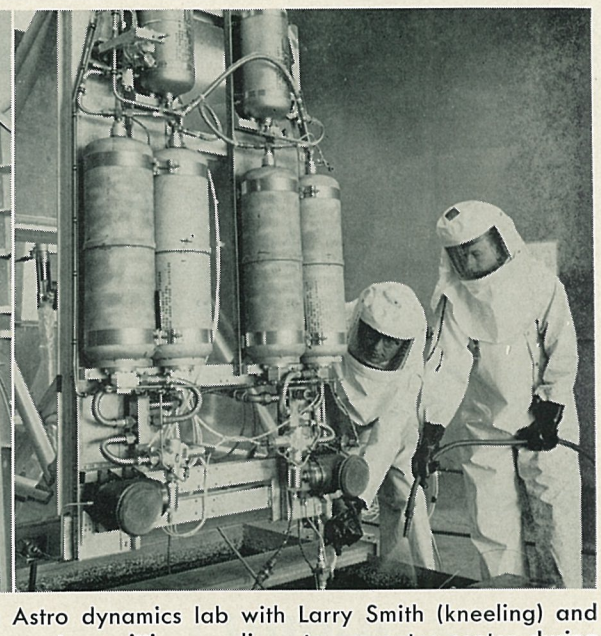
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CLOSE LOOK—George Gardner, GD/Convair material and processes lab technician, scrutinizes fittings of Little Joe II reaction control system before assembly to see that they are free from contamination.





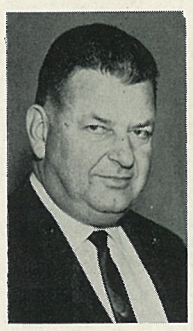


GROUNDED "FLIGHT"— Full-scale Little Joe II flight is simulated during current test program of attitude control systems at GD/Convair. From left: Len Wener, technical support group engineer for Little Joe II, explains closed circuit television setup in analog computer center to NASA inspection team during recent visit. At left is Sid Atwood, computer operator, monitoring flight at computer control console. Center shot is of fin in Astro dynamics lab with Larry Smith (kneeling) and Robert Wingfield, test engineers, transmitting readings to computer center during calibration. In background is J. M. Rice of Dept. 756 operating hydraulic equipment. In photo at far right is reaction control system with Smith and Wingfield, in protective suits, checking adjustments during fueling.

Log Book Entries



MANY YEARS—G. Garner Green, chief of structures at GD/Convair, received service emblem and congratulations from J. H. Famme, Convair president, on completion of 35-years service last month.



W. S. Stroud, GD/Electronics-San Diego program manager for REINS, received his 25-year service emblem recently.

Awards

SAN DIEGO

Employee Suggestion awards approved for periods ending Nov. 22 and Nov. 29.

Dept. 14-7, C. D. Duncan, $13.80.
Dept. 102, M. J. McCormick, $24.70.
Dept. 115, L. H. Roberts, $53.80.
Dept. 128, V. Breit, $50.30; D. J. Bridges and E. Carpenter, joint award, $7.05 each; F. Cruz, $15.
Dept. 131, A. V. Elo, $12.60.
Dept. 401-7, F. A. Boyle, $10.

Cost Improvement Proposals approved for the same periods.

Dept. 44, J. A. McSparron.
Dept. 93-6, A. A. Vernon, two proposals.
Dept. 131, A. C. Oehler, two proposals.

Personals

CONVAIR

We wish to thank all of our Convair friends for their thoughtfulness and kind expressions of sympathy during our time of sorrow at the loss of our loved one, W. F. Dust, Dept. 6.

Mrs. Dorothy Dust (Dept. 26-1) and son, W. J. Dust.

Service Emblems

CONVAIR

Service emblems due during the period Dec. 1 through Dec. 15.

Twenty-five-year: Dept. 6-2, Clark Kerr Jr.; Dept. 42-8, C. E. Keptner; Dept. 101, C. V. Beeson; Dept. 119, R. W. Talmage.

Twenty-year: Dept. 6-2, Rose E. Werner; Dept. 14-5, Manuel Duran; Dept. 44-3, C. B. Robinson; Dept. 48-36, J. D. Sanders.

Fifteen-year: Dept. 16-4, O. R. Sorensen; Dept. 26-1, Dorothy S. Dust; Dept. 48-11, C. W. Owen, M. G. Tefft; Dept. 115, V. J. Kravitz.

Ten-year: Dept. 6, R. W. Casebolt, Virginia C. Kahr, Caroline C. Lucas, E. L. Sisler, W. E. Sweat; Dept. 25-2, Leroy Hines; Dept. 48, C. W. Byers, I. L. LeDuc; Dept. 93-3, Jacqueline B. Roisman; Dept. 119, W. F. Engelhardt.

GD/ELECTRONICS

Ten-year: Dept. 55-00, J. P. Ryan; Dept. 71-00, Raul Vargas; Dept. 85-00, Josephine Q. Asaro.

Retirements

CONVAIR

ASARO—Giuseppe, Dept. 31. Seniority date Nov. 17, 1952, retirement effective Nov. 4.

COLLIVER—Euell L., Dept. 140. Seniority date Feb. 19, 1947, retirement effective Nov. 29.

DICKIE—David F., Dept. 25. Seniority date Nov. 21, 1950, retirement effective Nov. 30.

DURCK—Lester, Dept. 14-7. Seniority date Nov. 15, 1950, retirement effective Nov. 15.

GRAFF—Harry K., Dept. 217. Seniority date Oct. 6, 1947, retirement effective Nov. 12.

GRINDSTAFF—William B., Dept. 16-1. Seniority date Jan. 29, 1957, retirement effective Nov. 9.

HANDREN—Stanley G., Dept. 115. Seniority date July 29, 1949, retirement effective Nov. 15.

HARRISON—Aaron E., Dept. 133. Seniority date Jan. 17, 1951, retirement effective Sept. 30.

KINCHELOE—Paul W., Dept. 140. Seniority date Dec. 3, 1947, retirement effective Nov. 22.

McKEOWN—Charles F., Dept. 401-5. Seniority date March 14, 1951, retirement effective Sept. 20.

REHBERGER—Andrew J., Dept. 25-1. Seniority date June 13, 1951, retirement effective Nov. 30.

SIEVER—Jesse L., Dept. 401. Seniority date Sept. 27, 1939, retirement effective Nov. 13.

Convair Engineer Qualifies for Award

R. L. Hayward, senior design engineer at GD/Convair, has qualified for the $150 Writer's Award.

His technical article, "The F-106 Rotational Ejection Seat," appeared in last month's issue of the Interceptor magazine. This magazine is published by the Chief of Safety, Air Defense Command.

General Dynamics NEWS

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GD/E Area Reserved For Outside Lunches

An outside eating area has been set up for the convenience of GD/Electronics people at Plant 1.

GD/E people can eat their lunches in comfort in the sunshine in the fenced-in area back of Bldg. 51, adjacent to the experimental yard. Redwood tables and benches have been placed within the enclosed space and a stainless steel canteen will be located there by Prophet Co., operators of plant cafeterias.

Although the area is now open for use, more improvements are being planned. An aluminum overhead will be built for protection and, later games such as horseshoes will be provided for recreation.

Entire Flight of Little Joe II Duplicated in Control Checkout

(Continued from Page 1)

ed and tested by Walter Kidde & Co., Inc., of New Jersey, will take over at launch for the first ten seconds or so it takes for the vehicle to gather speed enough for the fins to stabilize the direction, and again when the vehicle enters the outer atmosphere, said T. J. Condon, Little Joe II engineer who is coordinating the test program.

The fins control the vehicle during flight within the atmosphere. But when the atmosphere becomes too thin, somewhere near 80,000 feet, the reaction control system takes command again.

Vehicle control is provided by elevons in the four aftbody fins and the reaction control subsystem, which uses hydrogen peroxide for fuel. The subsystem modules, each containing a nitrogen pressurizing tank and two tanks of fuel, are mounted in pairs, back to back, within each fin near the trailing edge. Cables from the autopilot relay intelligence to the system to direct control.

In charge of current test operation in the Astro dynamics test lab is Robert Wingfield, test engineer.

This particular test phase concludes a series of development tests at GD/Convair on the control system. These have included aerodynamics control system testing and ground vibration testing which were conducted by the Astro dynamics test lab; and autopilot development testing by GD/Convair analog computer lab. B. J. Kuchta and S. O. Atwood directed the autopilot checkouts.

Convair 880 Proves Its Safety Even Burdened by Heavy Ice

Convair 880s flown by Trans World Airlines have been judged airworthy in any kind of weather without the tail anti-icing system in operation, reports a team of GD/Convair men after a recent series of flight tests for the Federal Aviation Agency.

Cost of maintenance and replacement of the icing system prompted Trans World Airlines to request tests to find out if the system was actually essential. In a cooperative effort, GD/Convair men met with FAA and TWA representatives at the airline's Kansas City, Mo., overhaul base in late October to conduct a series of flights simulating heavy icing conditions to determine exactly how the 880 would react with and without the system working.

Wood shapes, designed at Convair to duplicate a 45-minute accumulation of ice, were attached on horizontal and vertical stabilizer leading edges and cups simulating theoretical ice shapes were placed on the tips of the horizontal stabilizers where ice would ordinarily form.

Three flights with the ice shapes installed were made on a single day. This, in itself, was a remarkable feat for TWA ground crews, said R. L. Runnalls of GD/Convair, who coordinated the test program.

"The mere fact that 11,000 pounds of ballast (sacks filled with sand) had to be shifted between each flight, alone was enough to make a real job to get the 880 back in the air for three separate flights in one day," said Runnalls.

The sand bags had to be placed in the baggage compartment to obtain required airplane test weights. Additional ballast had to be shifted in-flight between the cabin passenger seats to maintain the proper center of gravity to compensate for the lessening weight of fuel as it was burned off.

Runnalls commended all TWA maintenance and installation personnel responsible for support of the program who made it possible to complete the tests in two days.

Besides Runnalls, Convair's team included John Knebel, engineering test pilot who shared piloting duties during test flights with TWA and FAA pilots; Robert Peller, dynamics engineer; Harvey Booth, instrumentation technician; and Ken Jones, instrumentation engineer.

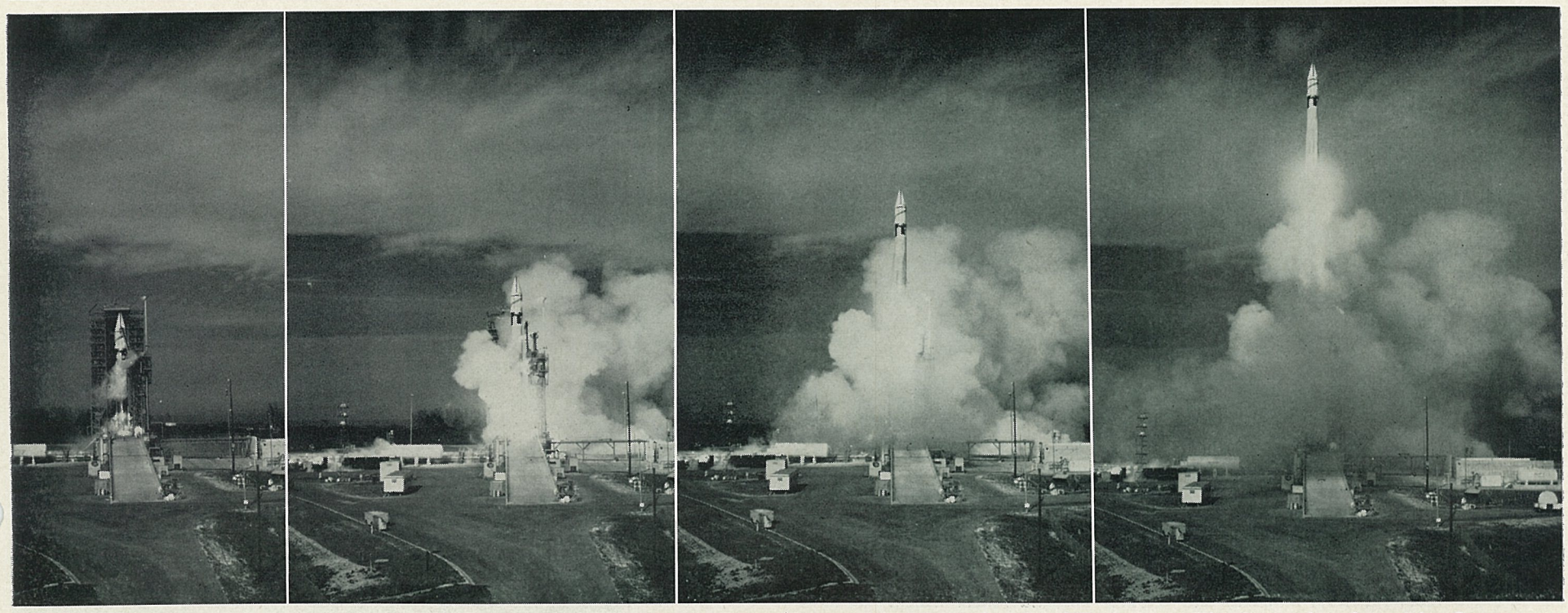
With successful certification of the TWA 880, Convair is studying the possibility of similar test flights to allow elimination of tail anti-icing systems on other versions of the Convair jetliner.

Design Supervisor's Article Published

J. E. Eichberger, GD/Electronics - San Diego design assurance supervisor, has received a $150 Writer's Award from the company for an article which has been accepted for the Evaluation Engineering publication's January-February issue. Title of the article is, "Design Review—Why and How?"



CERTIFICATION TEAM—Part of GD/Convair, TWA, FAA team conducting recent flight tests to certify TWA 880s for operation without tail anti-icing system includes (from left) Harvey Booth, GD/Convair instrumentation technician; Dale Beebe, TWA flight engineer; Gordon Granger, TWA pilot; Harvey Waldron, TWA instrumentation technician; Collier Walker, FAA, flight analyst; Dean Melton, FAA pilot; John Knebel, GD/Convair pilot.



THE LAUNCH—This was how Atlas-Centaur appeared to observers at Cape Kennedy. Sequence probably does not cover more than 10 or 15 seconds from instant that engines ignited and umbilical snapped back to point where Atlas-Centaur was well on its way skyward.

Atlas and Centaur Team Perfectly In Excellent Launch From 36-A

(Continued from Page 1)

per pound of propellant than any chemical combination of fuels now in use. Thus, it (Centaur) has broad application to many programs. For instance upper stages of three different Saturn vehicles will employ this fuel, as will NERVA (nuclear engine for rocket vehicle applications).

Complex 36-A at Cape Kennedy was the Nov. 27 launch site for AC-2. Launch came at 2:03 p.m. (EST) after an almost letter-perfect countdown marked by one minor hold (for ground support equipment adjustments) and one major one (for weather).

Dan Sarokon was Astro test conductor over the 75-man Astro launch crew. Roger Lynch, Centaur launch operations manager, acted as chief test conductor.

Some 200 cameras of every description focused on Atlas-Centaur Two as it rose slowly from the pad, gained momentum and arched into the heavens. Within a short span of time a spokesman signaled success with "It's over Africa and through the gate."

When Centaur engines were ignited deep in space for a 380-second run period, they became the first hydrogen-liquid oxygen engines to operate in space. When the entire Centaur vehicle (tanks, engines, nose fairings, etc.) went into orbit, it became the heaviest satellite yet launched by this nation.

Because this was a research and development flight, four major test objectives were established. They were to demonstrate the structural integrity of the Atlas-Centaur vehicle; verify the Atlas-Centaur separation system; demonstrate the ability of the Centaur propulsion system to be ignited in space and to burn for 380 seconds; and evaluate the accuracy of the Centaur guidance system.

In addition, the mission helped to evaluate Atlas-Centaur vibration, elastic behavior and structural adequacy; determine environmental levels; verify trajectory and orbit parameters; and evaluate performance of major subsystems.

To verify these many objectives, the entire Atlas-Centaur Two was heavily instrumentated. Five telemetry systems constantly recorded 326 different data measurements aboard Centaur and 167 measurements aboard Atlas. They cranked out 7,000 items of information per second, collecting on the ground over five million items of flight information by the time Centaur engines cut off. As Centaur coasted in space additional environmental data was transmitted for about 10 hours (life of batteries).

Centaur is a National Aeronautics and Space Administration program directed by the Lewis Research Center.

Two days after the launch, NASA announced that "in all respects, performance of the vehicle (Centaur) was very close to that planned."





ELATION—Two photos taken in blockhouse of Complex 36-A reflect tension and then elation. In foreground are Daniel Sarokon, test conductor, Roger Lynch, Centaur launch operations manager, Tom Chitty and Tom Hill, assistant conductors. Among those in background are K. W. Jeremiah, Astro assistant program director-Centaur, and Bob Gray, head of NASA's Goddard Field Project Branch at Cape.

Improvements Mark Centaur

In outward appearances, Atlas-Centaur Two closely resembled the initial Atlas-Centaur vehicle launched in May, 1962.

However, it included many significant changes, both in the space vehicle itself and in flight procedure.

For instance, there is a new engine chilldown procedure prior to launch in lieu of extended chilldown on separation of Atlas and Centaur.

Insulation panels and nose cone fairings were not jettisoned during this flight, since no payload was carried. There was also new and improved RL-10 engines and a new separation system which involved a linear-shaped explosive charge to cut through the interstage adapter and retro-rockets mounted on Atlas and used for the first time.

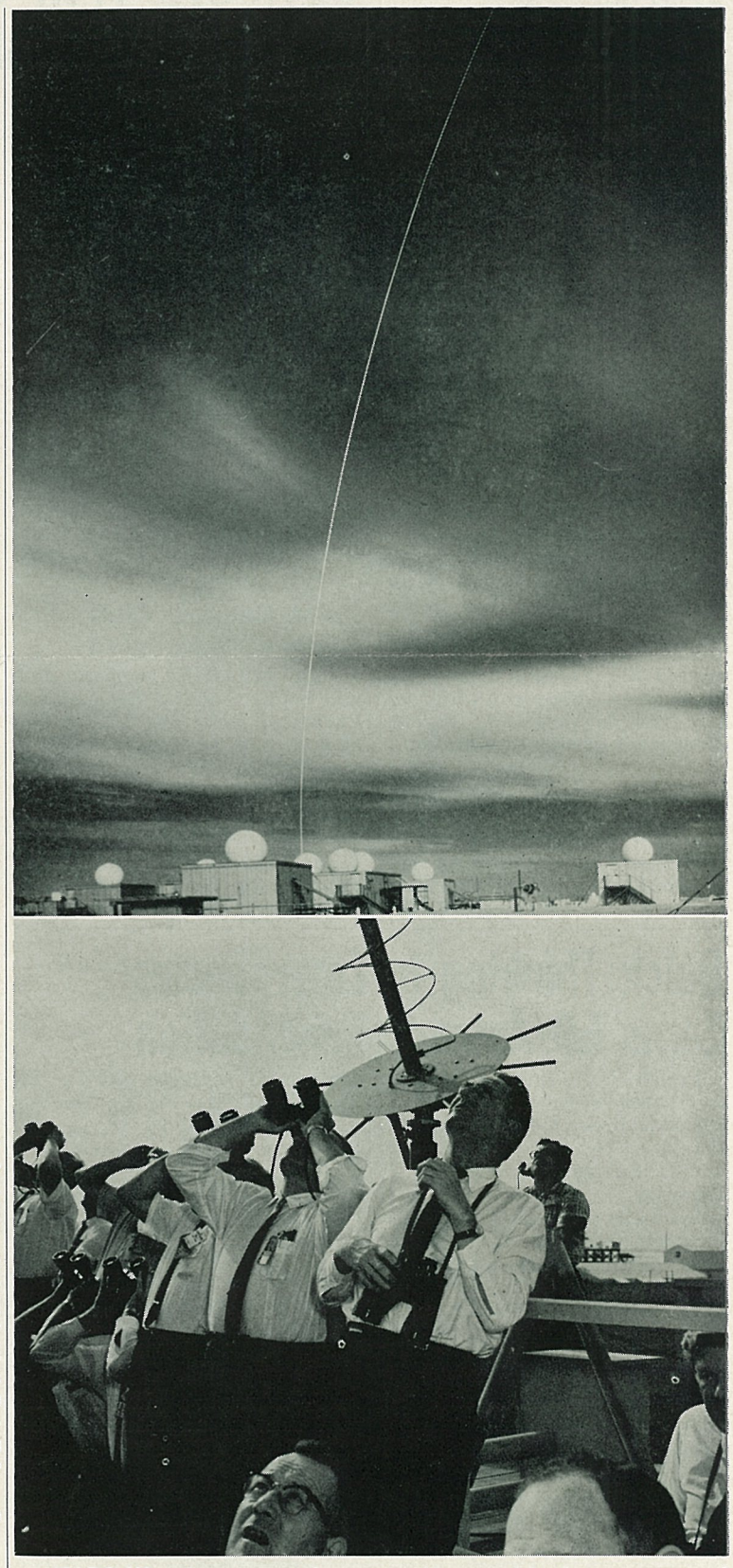
Inside the Centaur tank were new baffles to prevent sloshing.

Next Centaur Will Be a 'C'

Atlas-Centaur Two was made up of Atlas 126-D and Centaur 2-B. This alphabetical designation refers to the vehicle series.

Later in the Centaur program, as improvements are made to the vehicle, new model series will be used. For instance, a "C" series Centaur space vehicle will make the third flight. Initial operational configuration will be designated series "D."

Centaur 1-B is being used for static-firing tests at Sycamore Canyon, while a permanent-tank-type arrangement is used for tests at Edwards Rocket Site.



HEADS UP—Among watchers atop Hangar J in Astro compound at Cape was Roger Lewis, who drops binoculars momentarily. Upper photo is time exposure of 3½ minutes, using infrared film. At top of photo, booster has been jettisoned, AC-2 is running on sustainers and verniers at something like 8,000 ft. per second, at 90 miles altitude.

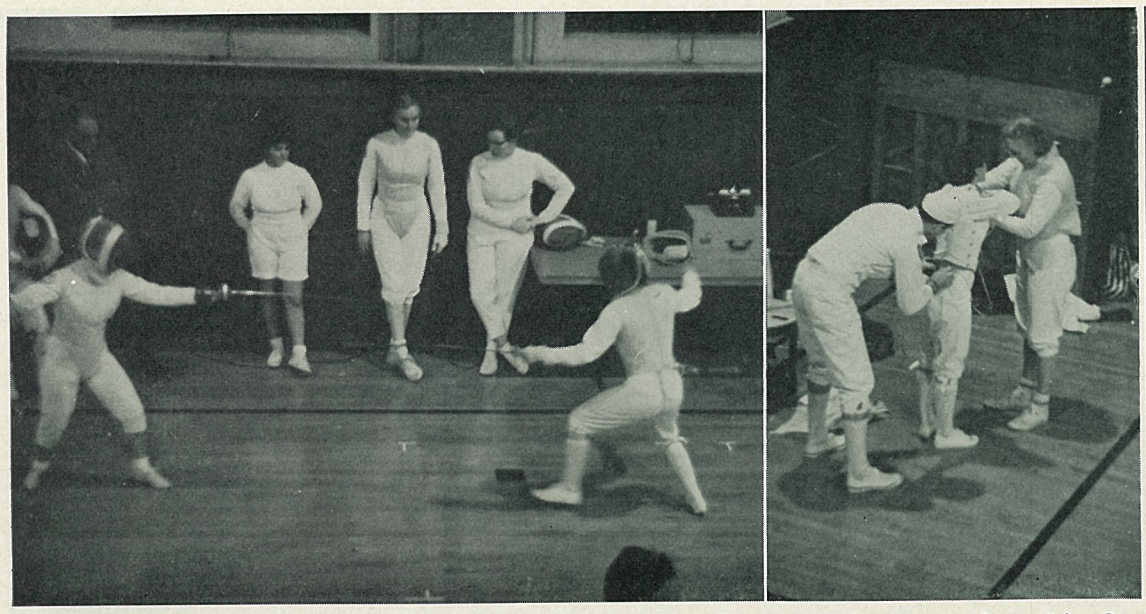
Studies Leading to Centaur Began in 1956; Astro Received Contract Two Years Later

Centaur evolved from GD/Astro (then Convair) studies in 1956 of strategic high-altitude satellites for early warning, global surveillance, communications and weather reconnaissance.

Initial Centaur was conceived for the primary purpose of developing liquid hydrogen technology.

Advanced Research Projects Agency awarded Astro a contract in 1958 to design, develop, construct, test and launch six Atlas-Centaur vehicles.

In 1959 administration was shifted to NASA and in June, 1960, to NASA's Marshall Space Flight Center. In October, 1962, the program shifted to Lewis Research Center and subsequently a DX priority was assigned to the program.



PREVIEW—Scenes similar to these will be repeated during Invitational Tournament hosted by San Diego Fencers, Dec. 15 in ARA Clubhouse. At right, ARA Commissioner Mike Hurley and Maxine Mitchell, Olympic fencer, assist Mrs. Hurley in connecting electrical scoring device prior to match. At left, Mrs. Hurley faces opponent from Pomona College, as, in background, GD/Convair daughter Marlene Qualiato, Mrs. Mitchell, and another Pomona fencer watch.

Cafeterias Slate $1 Holiday Dinner

General Dynamics Corporation cafeterias served by the Prophet Co. throughout the San Diego area will present their traditional Christmas dinners Thursday, Dec. 19.

For $1 employees will have their choice of either ham or turkey entrees, plus a full dinner of vegetables, beverage, pie, salad, rolls and butter. The ham entree will include sweet potatoes, while turkey will be accompanied by dressing and cranberries.

Feminine Speakers To Host Husbands

Delta Toastmistresses will entertain their husbands and guests at a Christmas party this Saturday, Dec. 14, at the Old Heidelberg Restaurant, 1323 Fifth Ave.

Program will be arranged around the Yuletide theme with all business dispensed with, said the group's president, Barbara Macdonald of GD/Electronics.

Cocktail hour starts at 6:30 p.m. with dinner at 7 o'clock. Price, including tax and tip, is $3.50 per person.

Members have until this Friday to make reservations by calling Barbara at Plant 1, ext. 1420.

Fencers Will Compete In Invitational Tourney

San Diego Fencers Club, to which several General Dynamics employees belong, will host its annual invitational fencing tournament Dec. 15 in ARA Clubhouse, directly east of GD/Astro main plant.

Entries include representatives of Pomona College, San Diego State College, Imperial Valley Fencers, Los Angeles Fencers Club, West Los Angeles YWCA, and others. Attendance is expected to top last year's record 63.

ARA Commissioner Mike Hurley said competition for both men and women will be included in the all-foil event. Preliminary matches, starting at 10:30 a.m., will use standard scoring, while electrical scoring devices will be called into play for semi-final and subsequent rounds.

Attending will be Maxine Mitchell, nationally known as a contender in Olympic and other major fencing events.

General Dynamics employees and their families have been invited to view the matches without charge throughout the day.

Joint Camera Club Banquet Scheduled

Joint ARA-CRA camera club will hold its annual banquet and Christmas party Dec. 15, starting at 6:30 p.m. at King's Inn, Mission Valley.

Included on the agenda are presentation of contest awards, plus showing of a movie, "It Sudses and Sudses and Sudses," produced by Sid Laverents, GD/Astro Dept. 951-5.

Quick Thinking in Emergencies Earns GD/Astro Commendation

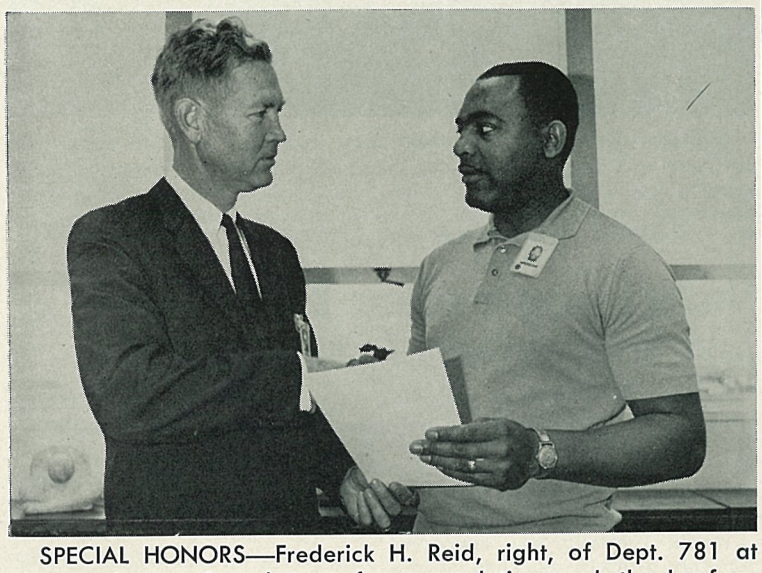
Frederick H. Reid (Dept. 781) last week received a letter of commendation, plus the personal thanks of General Dynamics/Astronautics, from President J. R. Dempsey.

Reid was cited for two specific incidents in which he "exhibited keen judgment, courage and intense loyalty." Both were credited with preventing material damage, personal injury and possible death.

On Nov. 5 Reid disconnected the line to a faulty electric drill that endangered the life of a contractor employee working at Astro who was being shocked and could not let go of the drill until Reid moved in to help.

Earlier, Reid extinguished a flash fire in a drainage sump that could have spread throughout the entire electronic manufacturing area in Bldg. 33.

Dempsey pointed out that "thank you" seems a small award for Reid's actions and added "I want you to know that all of us do thank you and admire you for your selfless, exemplary action."



SPECIAL HONORS—Frederick H. Reid, right, of Dept. 781 at Astronautics receives letter of commendation and thanks from President J. R. Dempsey. Reid was cited for two specific incidents when he helped prevent material damage, personal injury and possible death.

Rally Draws Field of 153

GD folk who participated in ARA Sports Car Club's Photorama V Rally Dec. 1 may see themselves in movies of the event to be shown at the club's meeting, 7:30 p.m., Dec. 17 in ARA Clubhouse.

Entries in this year's rally totalled 153. Winning car, a 1962 Alpine with driver Ronald Will and Judi Richardson, navigator, logged only a 2.03-minute error. In second were John Hammond and Linda Love who erred 2.43-minutes in their 1959 Porsche, while a 1961 Corvette with L. H. VanGessel and Randall Brown finished third with a 2.48-minute error.

Other trophy winners, in driver-navigator-error time order, were:

Gladys Hawkins, Bette James, 2.69; Neal and Charles Clark, 2.77; Jim Glasgow, Sandy Smolanivich, 2.92; L. A. Gaudreau, Bill Mears, 2.95; D. L. Hogge, Bonnie Parker, 3.03; James and Mary Moroney, 3.25; Jerold Larson, William Carpenter, 3.43.

Also Bill Shupe, Ralph Wilson, 3.46; Don and Nancy Westphal, 3.47; Joyce and Ken Partain, 3.60; Norman Lino, R. E. Wright, 3.73; and Ken and Myrtle Kelling, 3.73.

Recruiting Emphasized For Astro Players

Emphasis will be on "recruiting" at the meeting of Astro Players, ARA drama club, at 7:30 p.m. today (Dec. 11) in ARA Clubhouse, as the group seeks to strengthen its ranks in preparation for its spring production.

"No experience is necessary," is the slogan emphasized by John Cone, director and club president, who explained that all employees and members of their families are welcome to join the group.

"Prospective members need only be willing to learn," Cone said. "More experienced Astro Players are eager to introduce them to any area of theater in which they are interested."

Up-coming production of the little-theater group is "The Curious Savage" and will feature well-known Lillie Mae Barr as Mrs. Savage. All other roles are open, with casting to begin in February. The play opens March 26.

INSTRUCTION SOCIETY MEETS DEC. 19

General Dynamics members of the San Diego Chapter of the National Society for Programmed Instruction are reminded of the next meeting Thursday (Dec. 19). It will start at 7:30 p.m. in the Convair cafeteria, Pacific Hwy.

C-141 Empennage Components Together Make Imposing Array

All the components and parts that go into one C-141 empennage were spread out last week to show the many different items that General Dynamics/Convair fabricates for a single tail for the huge Air Force cargo jet transport.

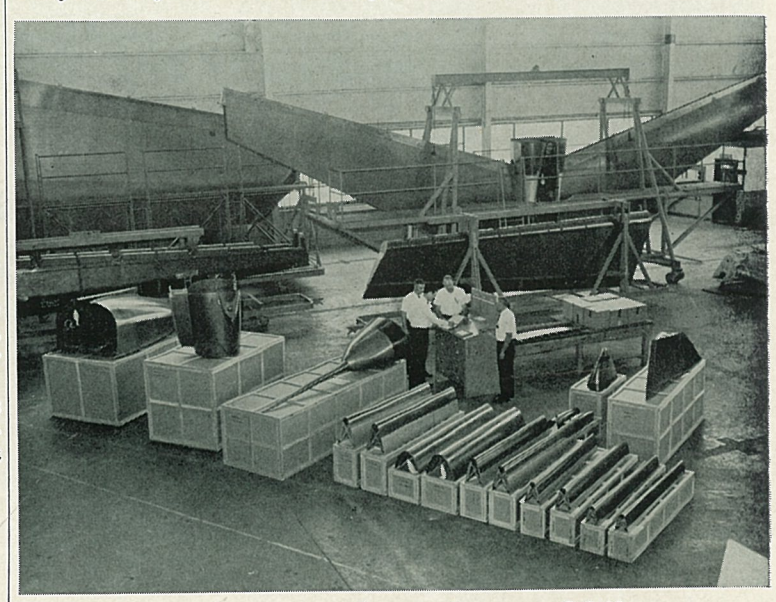
North end of Bldg. 2 production area was filled with the bright gold-burnished parts of the ninth C-141 empennage before they were packed for shipment. They will leave the San Diego plant tomorrow for the East Coast. Arrival at Lockheed-Georgia Co.'s Marietta plant will be about the same time next week.

Two cars, one of them the specially built hydro-cushion railway freight car, will carry the 21 major empennage assemblies.

The huge horizontal and vertical stabilizers travel side by side in the hydro-cushion car. Sixteen boxes hold the other major assemblies: leading edges, vertical trailing edges, horizontal stabilizer tips, LORAN antenna, HF antenna and boom, forward bullet, aft bullet, intermediate fairings.

Small loose parts such as bolts, fittings, small hardware items are packed in seven additional cartons.

GD/Convair is building 127 of the tail sections for the AF plane under a subcontract from Lockheed-Georgia, prime contractor.



TAIL PARTS—Components that go into one C-141 empennage fill area in north end of GD/Convair production building before shipment this week. Checking off items is Mel Thurmon, Lockheed source control inspection representative, flanked by E. E. Miller, Dept. 141 assistant foreman; Bert Mundt, Dept. 48 inspection leadman. N. P. Pearson, in charge of C-141 production at GD/Convair, stands at right.

NATIONAL VENDORS MEET SCHEDULED IN SPACE MUSEUM

Three General Dynamics men will be 1964 national officers of Space Flight and Equipment Association (SAFE) which will hold a national vendors meeting, Dec. 13 and 14 in San Diego Aerospace Museum.

At the meeting, manufacturers and distributors of survival, rescue and personal flight equipment will display products to flight safety specialists from aerospace industry, military and government organizations.

SAFE's national president for 1964 will be R. L. Wolf, GD/Astro Dept. 594-9; H. T. Webster, GD/Astro Dept. 557-2, will be president-elect and 1965 president; and R. J. Elling, GD/Convair Dept. 6, secretary.

Technical papers by B. F. Pierce and Bob Brazell of General Dynamics will be presented.

Officers of SAFE's San Diego chapter next year include J. A. Johnson, Dept. 594-9, president, and S. Congdon, Dept. 594-5, vice president, both GD/Astro.

Skaters to Continue Sessions at Plaza

General Dynamics Ice Skating Club will continue its regular Thursday private skating sessions at Mission Valley Ice Plaza throughout the holidays, including Dec. 26 and Jan. 2.

Discount tickets available at all employee services outlets continue to be honored: 25 cent discount at regular sessions, 35 cents off at the club's sessions, 6:30 p.m., Thursdays.

'San Diego' on Sale At Discount Price

A new edition of "Neil Morgan's San Diego" is available for purchase by Astro employees at 25 per cent discount from all major employee services outlets.

This year's edition of the popular volume is illustrated with several pictures of GD/Astro facilities and others by Astro photographers. Regular price of $2 is reduced to $1.50.

Gunners Fall Short, Pot Raised to $105

The pot was sweetened but unclaimed at CRA-ARA Gun Club's November Troy-type trapshoot when no sharpshooter could score the 50-straight to collect.

Seventeen competed in the Nov. 29 evening shoot at Gillespie Field Range with Bill Shrode the only one to score 25-straight in the 16-yd. event. He got $12.50.

He and two others had a three-way tie with 47 out of a possible 50 in both 16-yd. and handicap matches to each collect $4.25. The others were L. P. Johnson and John Beemer of GD/Astro.

It would have taken 50-straight in the combined handicap and 16-yd. events to win the big cash prize, which now stands at $105.75.

GD MEN ELECTED BY SPACE SOCIETY

A General Dynamics slate of officers was announced at the Dec. 5 meeting of the Aerospace Electrical Society's San Diego Chapter.

G. C. French of GD/Astronautics will head the group as president, succeeding T. W. Ochodnicky of GD/Convair.

Harvey Seibert, also of GD/Astro is new vice president; R. C. Worley of GD/Electronics, secretary; and A. A. Fabbri, GD/Astro, treasurer.

Two GD men will serve on the executive committee. They are E. P. Cormier, GD/Astro, and J. A. Decosta, GD/Convair.

New officers assume their duties the first of the year and will conduct the next meeting, set for the first Thursday in February.

Salvage Schedule

Salvage yards at both GD/Convair and GD/Astronautics will be closed on the holiday weekend before Christmas. However, the regular alternating Saturday schedule will be maintained at both GD locations on all other weekends. Schedule will be:

GD/Astro—Dec. 14, 28.

GD/Convair—Jan. 4. (Closed Dec. 21.)

Milling Takes Over Controller Post as Chitiea Leaves GD

John D. Milling returned to General Dynamics/Convair division this week as controller, according to an announcement by President J. H. Famme.

Milling succeeds A. J. Chitiea who has resigned from the company to accept another position. The appointment became effective Dec. 9.



J. D. Milling

The new Convair controller has seen long years of service with the organization, most recently as Astronautics assistant controller.

He joined Convair first in 1943 as an accountant and returned to the company in 1946 following Army service during World War II. He was named general accounting supervisor in 1951 and two years later became manager of general accounting. In 1960 he assumed responsibilities of both general accounting and cost accounting activities as manager of accounting at Convair.

At the time he transferred to the Astronautics division in fall of 1962 Milling was acting as assistant controller.

Chitiea assumed the position of Convair controller in February, 1962, coming to the San Diego division from the General Dynamics Corporation controller's staff at New York. He had formerly served in managerial financial positions with GD/Electronics-Rochester, N.Y.

Five Qualify For Cost Award At GD/Convair

Five General Dynamics/Convair men had passed the qualifying amount to be in the running for the 1963 President's Award and four others were near the mark early this month.

Each of the five candidates for the division's high cost reduction honor is well over the $25,000 minimum savings through CIPs, necessary for eligibility.

They are: H. A. Mohr (Dept. 101), $139,879; H. M. Woodard (Dept. 101), $139,879; E. V. Torp (Dept. 91), $250,634; K. K. Verseckes (Dept. 93), $27,399; K. W. Wulfemeyer (Dept. 3), $118,850.

Others who may still be in the running are: Willard Martin (Dept. 131), $13,020; L. W. Stamper (Dept. 119), $10,288; H. B. Day (Dept. 16), $23,727; R. L. Ingraham (Dept. 42), $19,129.

Although total dollar savings is main consideration in selection of the annual President's Award winner, other factors such as number of CIPs submitted and installed and originality and ingenuity of proposals also enter into final evaluation.

The award winner is usually announced by GD/Convair President J. H. Famme at a spring Management Club meeting.

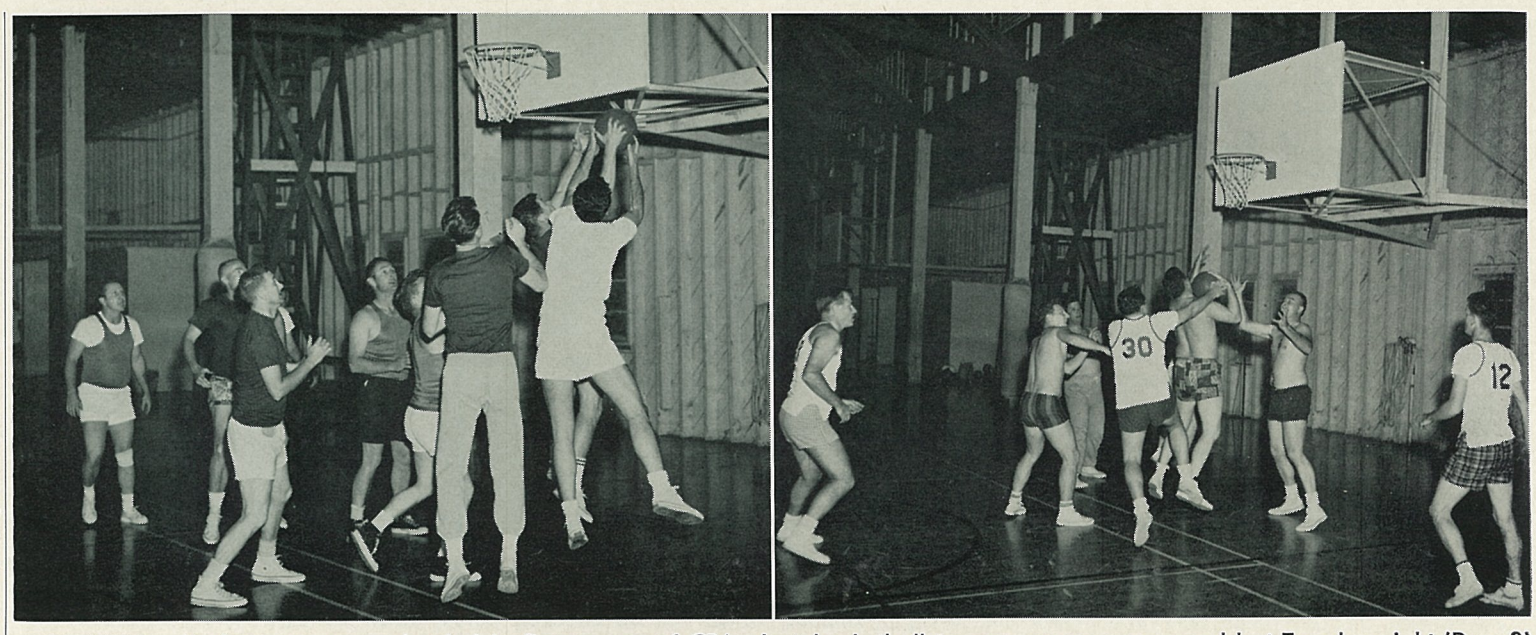
Winner receives a $250 merchandise gift of his choice, an individual bronze plaque, and has his name engraved on a similar perpetual plaque in the division president's office.

Last year's winner was Mattie C. Ross, assistant supervisor of GD/Convair telephone and teletype operations, the first woman ever to receive the division's President's Award.

Tijuana Tour Reset For Next Month

Annual tour of Tijuana, Mexico, arranged for General Dynamics people, has been rescheduled for Jan. 25.

Originally set for Nov. 23, the trip was cancelled when the border was closed at the death of the late President Kennedy, explained Jim Hardison of GD/Convair, conductor of the tour.



OPENERS—Six hoopster teams battled in first games of CRA plant basketball tourney as season opened last Tuesday night (Dec. 3) in Muni Gym, Balboa Park. Shown above (at left) are GD/E Material boys, in dark jerseys, taking ball from GD/Convair Data Processing. GD/E Material won, 39-14. At right are Hi-Lows, in white jerseys, fighting it out with GD/E Product Service. GD/E won 31-16.

GD/E Shooter Wins Turkey

Ralph Picard of GD/Electronics took home the bird from CRA Pistol Club's Nov. 24 shoot.

As high scorer in the "pure luck" shoot, Picard won a Thanksgiving turkey.

In other events Jim Halfacre (Dept. 140) took first in the Center-Fire Short National with 262. Commissioner Joe Williamson was second with 256; Picard, third, 241; W. G. Walker (Dept. 6), fourth, 240.

Williamson won a close .22-cal. Police Course match. His 292 was just a couple of points ahead of Walker's 290, and three more than third-place Halfacre's 289. Picard was fourth with 279.

The fourth Sunday match, which would have fallen on Dec. 22, will be cancelled because of the Christmas holiday weekend, said Williamson. Next regular club shoot will be Jan. 12.

Rockhounds Slate Christmas Party

CRA Rockhounds' annual Christmas party will be tomorrow (Dec. 12) at 7:30 p.m. in Gillespie Field Clubhouse.

Commissioner Dan Whorton said that two Walt Disney films, chosen for their interest to grownups as well as children, will be shown. Refreshments will be served.

Members will decide whether to hold a field trip during the holiday season.

The lapidary workshop at Gillespie Field closed last Wednesday until after New Year's. Instruction sessions will be resumed Jan. 8, 7-9 p.m.

Ride Club to Meet At Field House

CRA Riding Club families will join in their annual Yuletide celebration this Saturday night (Dec. 14) at Gillespie Field Clubhouse.

A holiday dinner will be served at 6 p.m. and there will be dancing afterwards until around midnight, said Commissioner V. V. Thomason. The Riding Club's own combo will furnish the music.

General chairman of the family affair is Luke Barbour with all the ladies drafted to assist.

Yugoslavia Ashtray Joins Collection

Gordon Needles, GD/Convair's ashtray collector (**General Dynamics NEWS**, Sept. 18), just received his first item from a communist country via the long-way round.

Two months of correspondence and waiting finally paid off last week when he received a bright, shiny aluminum tray labeled with the name of Hotel Metropole, Belgrade, Yugoslavia. It was forwarded to Needles by the German manufacturer, since it could not be sent directly from Yugoslavia.

This is the 28th country represented by commercial ashtrays in Needles' collection.

Sports & Recreation

Six Teams Swing Into Action As Annual Hoop Play Starts

Last Tuesday night saw five GD/Convair, GD/Electronics, and an Astro team swing into action as the annual CRA basketball tournament opened.

First games, all played on Balboa Park's Muni Gym courts, saw GD/E teams downing their opponents all the way down the line.

GD/E Product Service took first game from GD/Convair Hi-Lows, 31 to 16. GD/E Material beat Convair Data Processing, 39-14. And in the third game of the evening GD/E Chargers went on to slip one out from under Astro 310 Pubs, 31-23.

Last night (Dec. 10) GD/E Product Service took on 310 Pubs; Hi-Lows played GD/E Material; and Data Processing met the GD/E Chargers.

Dec. 17 schedule is: GD/E Material vs. GD/E Chargers at 6:50 p.m.; GD/E Product Service vs. Data Processing at 7:55 p.m.; and Hi-Lows vs. 310 Pubs at 9.

No games will be held in the "slow break" play during the two holiday weeks. Regular Tuesday night games will resume Jan. 7.

Coin Club Members To Vote Thursday

Coin club members from GD/Convair and GD/Electronics will meet next Thursday (Dec. 19) for election of officers.

Meeting is set for 7:30 p.m. in main dining room of the Convair cafeteria, Pacific Hwy.

Refreshments, entertainment, and an auction are scheduled, said John Barrett, club president.

Anyone who wishes to participate in a Christmas gift exchange is asked to bring a numismatic gift in the price range of $1 to $1.50.

Skiers Watch Films Of Famous Resorts

Convair Ski Club joined with Don Diego ski group to sponsor a "Snow Ski Film Festival" last Wednesday (Dec. 4) at Torrey Pines Inn.

The series of movies showed skiing in Europe and the United States, covering such well-known skiing resorts as Aspen, Vail, Sun Valley, Tyrolean Alps, Kitzbunel, and Courchevel.

The evening concluded with dancing to the Torrey Pines Trio.

Porsche Improvement Topic at CRA Club

CRA Sports Club fans heard Jerry Lehrer of GD/Astro tell how to modify Porsche sports cars to improve their performance for street use and racing at the Dec. 4 meeting.

A movie of Porsche racing events during the 1960 season was shown after the coffee break.

Next meeting of the club will be Jan. 8.

BASEBALL ENTRY AVENGES DEFEAT

Convair baseball entry in Industrial Baseball League came back to avenge itself against Oceanside when it took a tight 7-5 game in first tilt of the second round.

Oceanside had knocked down the Convair nine in their first time up when league play opened in mid-October. The company team stood 3 won and 2 lost at the end of first round. However, their Nov. 24 game with Astro No. 2 team was called off and will have to be made up some time after the first of the year.

Next Sunday (Dec. 15) Convair will play National City at 1 p.m. at the University Heights field. No games are scheduled the following Sunday (Dec. 22). After the Christmas holidays Convair will host Pacific Surplus on Dec. 29 at 10 a.m. on the Robb Tournament field.

Bridge Club Sets Master Play Dec. 17

CRA Bridge Club members will play for master points on Dec. 17 instead of the usual fourth Wednesday in the month because of the holidays.

Frank Westphal, club president, said that merchandise door prizes will be given and refreshments served.

There will be no bridge play on Dec. 25 and Jan. 1.

Chargers-Broncos Tickets on Sale

Discount tickets to the Chargers game with the Denver Broncos are now on sale for GD/Convair and GD/Electronics people at GD/Convair employee services, Bldg. 32, Plant 1.

The game will be played Dec. 22, 12:30 p.m., at Balboa Stadium. Reduced price for tickets is $3. This is a dollar off regular $4 seats on the upper deck, westside, on aisles 5, 13, 14.

TABLE TENNIS MEET SEEN

San Diego Industrial Recreation Council will sponsor a table tennis tournament early next year if interest warrants. General Dynamics folk have been invited to contact Ted Wilson, Ryan Aeronautical Co., 296-6681, ext. 1436, tournament coordinator, for additional information.

CRA Calendar

(Convair Recreation Association has some 40 activities in operation for GD/Convair and GD/Electronics people. For information call CRA headquarters, ext. 1245, Plant 1.)

★ ★ ★

AEROMODELERS — Flying sessions Saturday and Sunday mornings, 8 a.m. to 1 p.m., Clairemont Mesa Flying Site.

ARCHERY — Next regular club shoot second Sunday in January (Jan. 12), Balboa Park Field Range.

BASEBALL — Convair Industrial League team vs. National City at University Heights field Dec. 15, 1 p.m. No game Dec. 22.

BASKETBALL — Plant "slow break" league games Dec. 17, Muni Gym, Balboa Park, starting at 6:50 p.m.

CAMERA CLUB — Joint CRA-ARA Christmas banquet Dec. 15, 6:30 p.m., Kings Inn, Mission Valley.

COIN CLUB — Meeting Dec. 19 in Convair main cafeteria, Pacific Hwy., 7:30 p.m. Election of officers; gift exchange.

DELTA DIVERS—Joint CRA-ARA Christmas party Dec. 14. Call Harry Ruscigno, Astro ext. 4201, for reservations.

FENCING — Workouts and instruction each Friday, 7-10 p.m., YWCA, 10th & C Sts.

GLIDER CLUB — Meeting second Saturday of month (Dec. 14), 8 p.m., Golden Hills Playground Recreation Hall, 28th & A Sts. Call Don Larsen, ext. 2289, Plant 1, for information.

GOLF — CRA monthly tournament Dec. 14-15, Bonita Valley Country Club.

GUN CLUB — Troy-type trapshoot Dec. 27, 7 p.m., Gillespie Field Range. Club shoot Jan. 5. Regular meeting Jan. 14.

ICE SKATING — Regular Thursday ice skating sessions at Mission Valley Ice Plaza, 6:30-8 p.m.

MODEL RAILROAD — Work nights, Fridays, 7:30 p.m.; open sessions, Sundays, 1-4:30 p.m., House of Charm, Balboa Park.

MOVIES — Reduced prices for General Dynamics people at State Theater, Euclid and El Cajon Blvd. General admission: adults, 75¢; children, 25¢.

PISTOL CLUB — No shoot Dec. 22.

RADIO CLUB — Meeting tomorrow (Dec. 12), 8 p.m., Harbor Drive headquarters.

RIDING CLUB — Annual Christmas party Dec. 14, 6 p.m., Gillespie Field Clubhouse.

ROAD RUNNERS — Weekend outing to Painted Gorge Dec. 13-15. Christmas party Dec. 20, Gillespie Field Clubhouse.

ROCKHOUNDS — Christmas party Dec. 12, 7:30 p.m., Gillespie Field Clubhouse.

SNOW SKI CLUB — Call Joe Harris, home phone, 284-0278, for information on holiday ski outing.

WATER SKI CLUB — Weekend skiing on phone-call basis. Call Gene Sevigny, ext. 2701; Jack Loos, ext. 2456, both Plant 1.

Early Days

Thousands of Company Photos Catalogued in 181 Volumes

Nearly 100,000 pictures portraying development and products of major General Dynamics Corporation divisions have been gathered together at the GD/Convair photography lab into what is probably the most complete pictorial history of the company and its beginnings.

Consolidation of all available prints from various sources, such as Corporate and GD/Convair public relations, and the photo lab itself, has made possible a historical print file covering the 40 years since the formation of Consolidated Aircraft.

For weeks, the Herculean task of sorting, identifying, and filing prints by subject and date was a full-time "spare time" project in the still photography section. Now the thousands of pictures have been filed in 181 volumes by subject and in chronological sequence for easy reference.

"We worked backwards," said Martin Miller, photography assistant supervisor, who directed compilation of the print file.

"Our first objective was to get all prints on hand of our latest aircraft, such as the 990 and 880 jet transports, into order. As we kept breaking down piles of pictures, we found that we had prints of practically all planes ever built by the company, so we decided to go all the way and do a good job while we were about it. Now we have a complete print file of GD/Convair's history and products as well as a representative cross-section of Pomona, Fort Worth, and Astronautics products."

The picture history begins with shots taken in 1923 of Major Reuben Fleet's first Consolidated Aircraft location at the Gallaudet Aircraft factory in Rhode Island, and the infant company's first plane—the TW-3 trainer.

The 40 years and some 100 planes and missiles since are faithfully depicted.

The file has been divided into major fields of interest: general plant shots, important visitors and events, models of aircraft and other products subdivided into production, in-flight, combat, and other specific areas of activity.

For instance, one book contains a whole sequence of the construction and "launching" of the famous V Grand, 5,000th B-24. Pictures show that it was truly the "flying autograph" it was called from the tightly woven pattern of signatures of practically everyone working in the plant at the time it left the production line in 1944.

Rare shots show B-24 Liberators and PBY Catalinas in action in all World War II theaters of action. Planes ablaze, wings shot half through, nose sections and fuselages blasted—the craft that came back, and some that didn't—are perpetuated through the lenses of Air Force cameras.

Far-out dreams of the future, as devised by 1937 designers, still look as improbable today as witnessed by drawings of a twin-pusher flying wing.



PICTURE HISTORY — Martin Miller, assistant supervisor, watches photographer Robert Herrmann stack old prints as thousands of pictures tracing development of products are consolidated at GD/Convair photo lab to compile 181-volume print file.

Better Advance Planning Urged To Conquer Logistics Problems

Industry and government must define and plan in greater detail logistics support to be required for a program during the development, acquisition and operational phases.



E. D. Bryant

This opinion was expressed by E. D. Bryant, General Dynamics/Astronautics vice president - operations, recently before a Joint Technical Conference in Anaheim sponsored by top national technical societies.

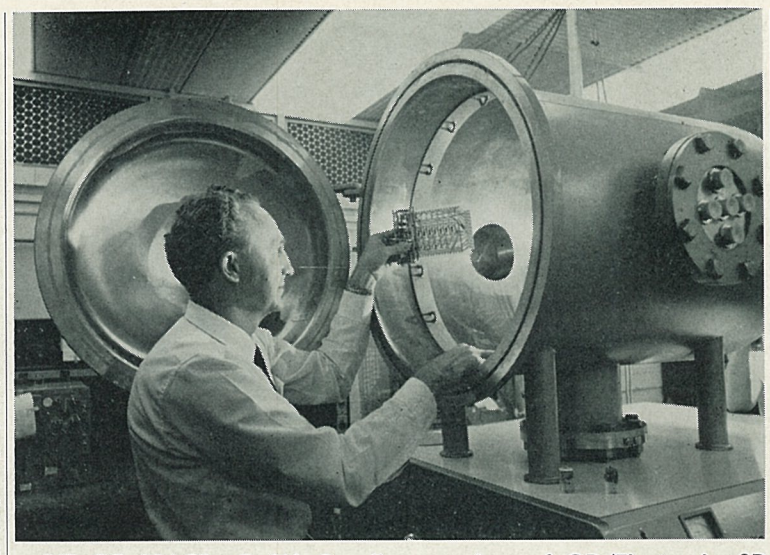
In his talk, "Industry Looks at the Modern Logistics Problem," Bryant called for a common understanding between contractor and contracting agency to begin early in the proposal-development stage and to be integrated throughout the program.

Bryant advocated longer retention of contractor personnel in the operational phase of each program, stressing the availability of "know-how" as a means of shortening down time for maintenance, improving provisioning through direct lines to contractor facilities and further means of "on-the-job" training via a person-to-person approach.

Looking to the future, Bryant called for more descriptive, more accurate and more sophisticated technical data.

"The space stations of tomorrow can not have room for today's 'libraries' of data, but must rely on computerized signals which produce images from central 'libraries' on earth," Bryant said. "We should start refining technical data techniques now!"

Bryant also pointed out that direct-line spares support is needed to link the user and the contractor to insure maximum combat readiness.



BIT OF SPACE—E. W. Revell, supervisor of GD/Electronics-SD environmental lab, shows relative size of small electronic assemblies which will be checked out in outer atmospheric conditions in new environmental space chamber.

Cold of 'Outer Space' Chills GD/E Test Units

A new environmental space chamber has been acquired by General Dynamics/Electronics-San Diego for the sole purpose of testing GD/E electronic components which will be traveling through space aboard vehicles of the future.

The chamber, located in the GD/E environmental laboratory area at Plant 1, San Diego, will be more suitable and less expensive for checkouts of small electronic assemblies than the available large environmental chambers, said E. W. Revell, laboratory supervisor.

Until now, all simulation of outer atmospheric temperatures and pressures had to be done in the large space chamber in Astronautics dynamics laboratory, he explained. The present miniature-sized chamber—2 feet in diameter and 3 feet in length—costs about one-tenth as much to operate and is just the right size for the small electronic parts, which rarely weigh more than 30 lbs., and average nearer to 15.

Temperature range is from a high of 260 degrees Fahrenheit to a minus 170 degrees with use of liquid nitrogen as a coolant.

Components are bolted to aluminum plates and suspended from a stainless steel ring within the chamber. Temperatures are controlled by passing a refrigerant (similar to anti-freeze) through pipes welded to the lower side of the plate cradle.

Capabilities can be increased if necessary, said Revell. Solar simulation could be obtained by inserting a quartz window in the chamber's door and directing high-powered light beams through it. Higher temperatures could be reached with infrared heating, and lower by insertion of a liquid nitrogen shroud within the chamber.

Third Value Engineer Seminar Nears For Customers/Suppliers

Nearly 40 military and vendor representatives were expected to attend GD/Convair's third customer/supplier value engineering seminar this week at the San Diego plant.

The three-day seminar, Dec. 10-12, will deal with all phases of value engineering and value analysis, said H. P. Williams, GD/Convair value control manager. It also includes a workshop project.

A special meeting of the Society of American Value Engineers (SAVE), San Diego Chapter, has been scheduled for tonight in conjunction with the seminar. A panel discussion will be centered about the contractual aspects of value engineering. Value engineering requirements as included in Armed Services Procurement Regulation (ASPR) will be explained.

Delegates to the GD/Convair value engineering seminar will be present and take part in the SAVE program. It will be held in the main dining room of the Convair cafeteria, Pacific Hwy., with dinner at 6:30 p.m. and meeting at 7:30.

Seminar members were welcomed yesterday morning by J. H. Famme, GD/Convair division president, and have heard explanation and discussion of Convair's value control principles and techniques by Williams, H. R. Kennedy, W. G. Martin, J. R. Spurgeon, C. S. Brandt, H. G. Rote, S. W. Swenson, G. P. Williams.

Today D. L. Macey of GD/Electronics will speak on "Progress Through Partnership," and E. D. Heller, value control manager at GD/Astronautics, will talk on "Costs and Cost Targets."

C. W. Frick, GD/Convair vice president-engineering, will discuss "After Training—What Then?" tomorrow at the conclusion of the seminar. H. W. Rubottom of educational services will present diplomas.

Military commands which indicated that they would send delegates include: the Air Force's San Diego Contract Management District; Air Force Systems Command, Space Systems Division; Air Force Ballistic Systems Division; Bureau of Naval Weapons Representative; Headquarters Comptroller, 11th Naval District; Naval Air Station North Island; Technical Support Directorate, Pacific Missile Range; and the Marine Corps Recruit Depot at San Diego.

Space Society Recognizes GD

A General Dynamics/Astronautics man, Ray Crowell, Dept. 362-1, was installed as national president of National Society of Aerospace Professionals Dec. 5, as the organization honored his company for its role in Project Mercury.

NSAP this year selected the Mercury "man in space" program as recipient of the John J. Montgomery Project Award for outstanding contribution to aerospace achievement.

Key figures from major agencies associated with the program were honored at a banquet last week in San Diego's El Cortez Hotel.

Cited as representative of their organization's efforts were NASA officials Dr. Robert R. Gilruth, Dr. Walter C. Williams, K. S. Kleinknecht, Cristopher S. Kraft Jr., M. A. Faget, Dr. C. A. Berry and Lt. Col. John Powers, plus the seven Mercury astronauts.

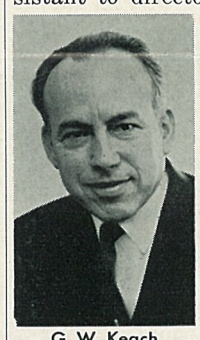
GD/Astro was represented by President J. R. Dempsey (C. S. Ames, vice president — space launch vehicles, attended the banquet in his behalf); K. J. Bossart, technical director; and B. G. MacNabb, director of test engineering.

GD/Electronics-San Diego, which provided the Operations Room for Project Mercury, was represented by Arch H. Wisdom, manager of research and engineering for GD/E data products.

The Montgomery Award is presented jointly by NSAP and San Diego Aerospace Museum, as a tribute to all who contributed to the success of the selected project.

GLENN KEACH NEW PRICING DIRECTOR

Glenn W. Keach, formerly assistant to director of finance for Aero-space division of Boeing Company, has joined General Dynamics as director of pricing, reporting to C. L. Meador, vice president-contracts and pricing, in the Corporate Office.



G. W. Keach

Keach, who attended Compton Junior College and University of California, was with North American Aviation from 1938 to 1962 where he was chief of contract proposals and chief of estimating, as well as holding other executive positions.

GD/Convair Management Club Joins Others In Establishing Local Scholarship Fund

GD/Convair Management Club has joined other San Diego groups and companies in establishing a local scholarship fund for worthy San Diego students.

The club's board of control has voted to divert half of all raffle proceeds to the San Diego County Citizens' Scholarship Foundation, now in final stages of formulation. The San Diego nonprofit scholarship organization is patterned after the original foundation set up by residents of Fall River, Mass., in 1958. This concept of a scholarship fund to which all may contribute for the benefit of a particular locality's own young people since has spread to cities in at least 30 states.

Scholarships are awarded on a basis of scholarship records and financial need. Amounts vary according to the students' actual expenses. A financial awards committee screens applicants and selects scholarship recipients with the assistance of school officials.

First San Diego scholarships will be awarded next year after money donated to the foundation has reached an amount large enough to supply several awards. A public fund-raising drive is considered after the first of the year to help get the foundation under way.

Convair sons and daughters, as well as all other high school students who have lived in the county for a year, may apply for the awards through their high schools.

H. W. Rubottom is representing the GD/Convair Management Club on the foundation as a member of the financial awards committee, while Joe Freeman is serving as chairman of the membership committee.

A third GD man, D. L. Macey of GD/Electronics, also is a member of the financial awards committee.

Next GD/NEWS Issue Will Be Dated Jan. 2

The next issue of General Dynamics NEWS will be on the stands three weeks from tomorrow, Jan. 2.

The usual two-week interval between publication dates is being extended due to the year-end holidays. California divisions will shut down Dec. 23, 24 and 25, and Jan. 1.

Are you giving your Fair Share through Con-Trib-Club?